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SWIMMING LESSON

By

RAYMOND F. JONES

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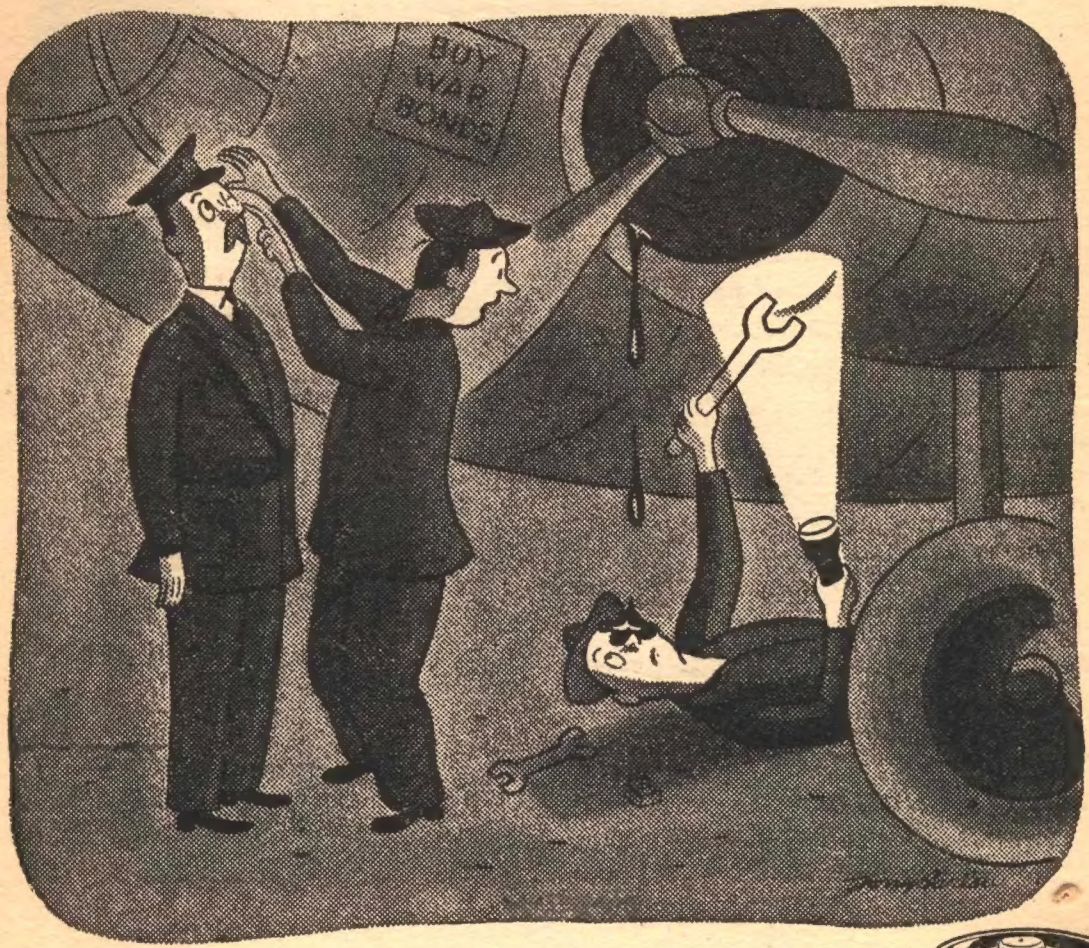

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NEW ORDER

Herr Schickelgruber's New Order reaches even into the realm of science-fiction. The man most Americans most want to meet has succeeded, at least, in bringing about a change in Astounding Science-Fiction that I don't like, you won't like, and nobody will particularly enjoy. Beginning next issue, Astounding Science-Fiction starts taking into account the several different rationing provisions now necessary.

First, a brief review of how the mechanical end of manufacturing a magazine is worked.

The author's manuscript, after editing, is sent to the composing room, where it is set in type on Linotype machines. (The type metal is an alloy of tin, lead, bismuth and antimony. Tin's a precious metal dearer than gold. The alloy must be used because it is one of the few known—the only practicable one—that expands on freezing, and so will yield a sharp impression of the type.) The Linotype slugs, assembled in galleys, are printed in proofs which are read and corrected, measured out into pages, and the Linotype slugs rearranged into page form.

From that point, two processes are possible. One, the stereotype method, involves making a sort of papier-mâché matte that reproduces the type with surprising sharpness and fidelity. From the paper form, a type-metal casting can be made in a special casting machine—a cast which is, however, curved to fit the rolls of printing presses instead of being flat, as the Linotype slugs necessarily are.

By this method, the printing surface actually used on the rolls is achieved by using practically nothing but type metal—a material which can, of course, be remelted into ingots for further duty when the issue is printed.

The second method of getting the printing surface involves electrotypes. In this, the Linotype slugs, assembled into page forms, are pressed into a plate heavily coated with wax. The wax impression is dusted with finely ground iron and graphite powder to make it carry electricity, and put in a copper-plating bath. The electrolytic deposit of copper is built up till a fairly strong shell is made, when it is stripped off the wax, a layer of tinfoil pressed into it, and a mass of type-metal cast on to give it the necessary mechanical rigidity and strength. The copper itself is too soft a metal to stand the heavy wear of the presses, and is, therefore, nickel-plated to protect it. (The plating, incidentally, is not the familiar shiny nickel, but a dull, steel-gray, hard, tough layer deposited by a special type of electrolytic bath.)

Hm-m-m—so far, that has used tin, copper and nickel. The cuts for the magazine are made, necessarily, on silver-sensitized zinc plates. That makes five of the topmost critical metals.

We cannot go on using electrotypes for Astounding Science-Fiction—and to continue the large-size page, we would have to, for we have not, and cannot get now, a stereotype machine capable of casting a plate of this size.

Every publisher has been asked to cut his paper consumption by ten percent.

It would save silver and zinc if the cuts used in the magazine were smaller in area.

These facts add up to one answer—the smaller, standard-size magazine. And there's another to reinforce it. The issue of the magazine you now hold may hang together long enough for you to finish reading it, if you handle magazines reasonably carefully. If not, it will certainly start shedding its pages. There is only one of the tin-coated steel-wire staples necessary to hold the pages in place in the binding; there should be two.

In the small-size magazine, we will begin the use of a different type of binding—the glued fastening similar to that used on books. It won't be as good as the two-staple-and-glue method used earlier, but it will not require critical materials, and will give reasonable strength and solidity.

The contracted Astounding Science-Fiction of the New Order will be smaller in size, but have one hundred and sixty pages. Those pages will not be quite as airy and readable as of old; we are going to use a smaller, more compactly set type, and take a nibble off each margin to increase the wordage. We haven't yet seen a made-up issue of the new size, but I believe that the wordage will be practically the same in the small size, one-hundred-sixty-page edition as in the present format.

And, while we may be limited on quantity and quality of physical materials—Lord knows, we aren't selling stationer's supplies!

THE EDITOR.

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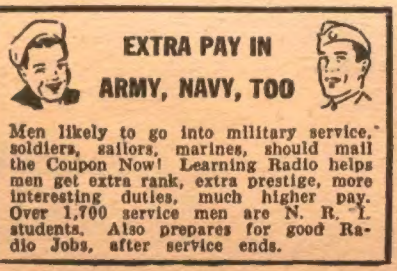

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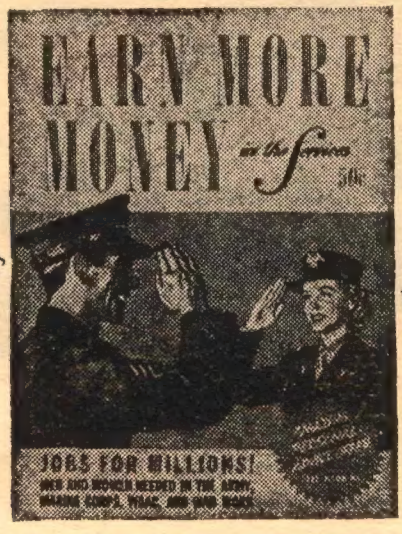

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SWIMMING LESSON

By Raymond F. Jones

THE quick way to teach a man to swim is to heave him in deep water. And the quick way to learn that Venus meant War, and that they had that impossible Artificial Sky—was to be caught and roast under it!

Illustrated by Orban

"I remember when I was a kid," said Boris Hardin, "my father gave me my first swimming lesson. He threw me in ten feet of water and walked away."

Pete Wilson averted his eyes from his superior. In a way he felt sorry for the military clique here at Astronaval. They had taken a hard beating during a half century of peace.

He looked back. Hardin was still drilling him with those eyes that held simultaneous fierce pleading and bitter command.

"I don't see what you're getting at, sir," said Pete. "The swimming lesson—"

Hardin's eyes looked up. But his head was down like that of a truculent bulldog who knew he was going to be hit and was making no move but to clench his jaws tighter before the blow fell.

"Listen to me, you fool." Hardin's mouth was a straight line, alternately widening and thinning. "Inside of six months you're going to get exactly that same kind of a swimming lesson. You and everyone on Radiation Asteroid. Some morning you'll wake up and the sun will look twice as large as it did the day before. It'll burn down with four times the energy. The open huts on the Asteroid will crisp and burn with you and the five hundred others in them—perhaps a few will make it to the radiation pits, but that won't help long. By nightfall—if *they* are merciful enough to give you a night—your skin will be a sheet of desiccated leather. And then will come the blizzards and howling wind and blowing snow. If there's any life left in you then, you'll call your miserable researchers to their laboratories and try to find a way through the Artificial Sky before that burning sun rises again, ten times as hot as before. That will be your swimming lesson!"

Pete endured an embarrassed silence. "No one outside Astronaval seems to agree with you on that point, sir," he said thinly.

"No one outside Astronaval knows a thing about it."

"Our State Department—"

"Our State nursery! The Military Intelligence has proof that the Venusian Korphs have already set machinery in motion to attack us within six months. We've got proof of it.

Copies of their plans and orders are in our files. Radiation Asteroid is the first outpost on their list."

"Then why don't you move to forestall them?"

"We have. We will."

Boris Hardin set his jaw again as if to await the blow. "But they have the Artificial Sky."

Pete Wilson reddened. He felt it rising to his ears and into the surface of his scalp.

"I beg your pardon, sir. But there is no Artificial Sky."

"No Artificial Sky, eh? I suppose I didn't see the burned and frozen corpses of a million people covered with the frost crystals of their own atmosphere after the Artificial Sky was removed."

"Sir, it was—"

"Never mind that 'sir' stuff. Say what you think. Let's get down to some healthy name calling so I can tell you what I think of you and all the pink-eared, long-haired researchers of your ilk. You haven't got the brains and guts of a new pup.

"You twiddle dials and stare through eyepieces and come up pop-eyed with ecstasy over the fact that the hectographical dimunation of the Plutonian graphosphere is one milliwham more than it was previously thought to be."

"We're—"

"Shut up! I know what you're doing out there on Radiation Asteroid. I've got all your papers and reports for the last five years. Here they are."

He swept a mass of papers from his desk to the wastebasket. "A beautiful mess they are. The greatest achievement you describe is the variation of a couple of spectra by an angstrom or two. The least is the astounding discovery that the *jiptus* bug can exist in a a temperature range of eight hundred degrees. Stupendous!"

The veins at the side of Pete's head were visibly pulsing, dark and purplish. His fist rested on the edge of the desk and he leaned toward Boris Hardin, Scientific Chief of Astronaval.

"All right, here it is then. You're a stupid ass, Hardin. Why don't you fire me and get someone who'll jump when you call? You could, you know—incompetence or something like that. But you won't because you know damned well it was my discovery of the variation in the solar spectra that made a twenty percent increase in the ray range of your newest guns possible. You know that the five hundred of us on Radiation Asteroid are the only hope you have. It's only through the by-products of our discoveries that you can manage to perpetuate the obsolescence of your militarism. Your weapons are the shavings, the scraps that come from our scientific work. You and all the rest of those in Astronaval are nothing but parasites on civilization. Why Earth tolerates you is more than I can understand. Why the government permits you to exercise a nominal control over the activities of a thousand researchers who were splitting atoms before you could count to four is plain insanity. One of these days soon that will be changed."

Hardin rose, his face like a chunk of meteorite floating in space. But Pete swept on.

"Utopia is here, Hardin, and you're blind to it. There will never be another war. Sure, I know about the Korphs and the Titans and the Phobosians and the Ganymedians. I was on the commission that drew up the treaty—or had you forgotten? We inspected the corpses you wax so sentimental over. It was our verdict that they were defeated and killed in a just defense for their unprovoked attack on the Korphs. I know the treaty was just. I met and lived with the Korph delegation for six months.

"The Solar System has seen the last of war. Earth herself has had no conflict with any source for over fifty years. Civilization has come of age and you and your clique of militarists are trying to drag us back to the Dark Ages.

"As for the Artificial Sky—it's nothing more than a militarist's dream of the perfect weapon. It's a physical impossibility. Sometime when I have a day to waste, I'll show you the proof."

For about twenty seconds Boris Hardin looked into Pete Wilson's eyes. He scanned the young physicist's face, a face built of vertical lines and planes in contrast to the horizontal development of his eyes.

With microscopic precision he viewed Pete's high, thin forehead with its slightly receding hairline, his deep-set, brown eyes.

"There must be *something* besides purple mush between those ears—there's *got* to be," he murmured fervently. "There's just got to be." Then, "Come here," he ordered.

Reluctantly, Pete turned and followed slowly to the other side of the war scientist's office. There, a section of the wall was slid

back and Hardin drew out a heavy metal base loaded with a hookup of gadgets utterly foreign to Pete.

"What's that? Something a retired general put together in a nightmare?"

Hardin made no answer but set the equipment on a table and went back to his desk. He returned with an apple. Tying a string to the stem, he suspended the apple from the ceiling directly over the strange equipment. Then he plugged a heavy lead into the wall and made some critical adjustments.

Nothing visible occurred. "Maybe you forgot to say abadaba," suggested Pete.

Then it happened. About the apple appeared a coppery sphere.

"What's that?"

"Here." Hardin picked up a pair of pistols. "The best solid shot and the best ray projector we've been able to salve out of the scraps from your sanctified table. Put a hole in the apple."

A bit uncertainly Pete took the guns from his chief. He lifted the ray projector. His smile waned as his arm steadied the heavy pistol. He pressed the trigger.

A flood of burning energy flowed out of the crystal refractor in the nose. It touched the copper sphere and illuminated it like an intense flashlight beam—the ray that Pete knew would pierce ten inches of the best steel on Earth.

Dismayed, he lowered the projector and lifted the solid-shot pistol. He fired once. Then amazement clouded his face. There, inches from the sphere, the bullet slowed to a crawl. With barely perceptible motion, it closed in the last fractions of an inch, then hung immobile a quarter of an inch from the copper sphere.

"Well, I'll be damned! That's a hell of a neat toy you've got there, Hardin. Where'd it come from?"

"It's a present from the Korphs, direct from Venus. Eighteen of our best agents died in the delivery of it, but there it is, all for you."

"But what is it?" Pete approached closer and peered at the hazy outlines of the sphere.

"It's the Artificial Sky, you ass. The apple inside is Radiation Asteroid, and the bullet hanging there is us trying to get in to you —or you trying to get out—take your pick. Suppose you take the rest of the day off and show me that little proof you had that the Artificial Sky can not exist."

Pete turned slowly. He looked down to the head-shorter height of the dogged militarist. "Name calling is about your speed, isn't it, Hardin? No more wars to fight. No real authority that you can be sure the government will back. I feel sorry for you and your gang in Astronaval. Why don't you just die?

"As for this little toy here, do you think I'm going to waste my time tinkering with that? The dumbest assistant on Radiation Asteroid could duplicate that effect a hundred different ways. And they'd all be tricks as good as this one."

Boris Hardin raised his eyes and set his jaw. "So it's a trick, eh? All right, Pete. One last trick, then. You take that little toy back to Radiation Asteroid with you and produce something that will pierce the Artificial Sky within four months or I'll take the little authority I do have and close up Radiation Asteroid. I'll take you five hundred low-grade morons and scatter you to the ends of the Solar System. And for those four months I will sit here and just think—think of a place suitable for you, personally, if you fail."

Pete Wilson started to grin mockingly again. Then something in the little man's eyes restrained him. He saw a depth of passion, and a blind, unreasoning hatred lurking there that gave him a sickening sensation of suddenly peering over the edge of a volcano.

He knew that the destruction of his entire life's work could be triggered by a half dozen more careless words from him. For Boris Hardin held that power of destruction and Pete knew his war madness had at last brought his mind to the thin borderline of sanity.

"Sure, I'll see what I can do," he muttered uncertainly. "Have the thing crated and put aboard the *Eros*. I'll be taking off at seventeen."

Astronaval was an ugly, archaic block, a hangover from the long-gone Utilitarian period of architecture. It was hidden deep in the almost forgotten center of the city where no other government office could be driven into it. Pete hated the ugly, bedraggled bluntness of the thing. It reminded him of the men who worked in it—dreaming and planning only war and destruction.

He shrugged off the atmosphere of the building as he stepped out into the sunlight. He wondered what it would be like to have a mind like Hardin's—living a lifetime in the shadow of a mental fantasy of war.

"Hello, there. I thought you were never coming. Did you see Dogpuss?"

Pete turned at the pleasant sound of the voice. "Hello, Marla. I hoped you would wait, but it took longer than I expected."

"What happened?" Instantly, she knew she should not have asked. His face still registered the effects of Boris Hardin's threat and the peril into which his own carelessness had nearly thrust all of Radiation Asteroid's "family."

"I'll tell you when we get under way," he said. "Let's get back to the ship. How was your day?"

"Swunderful. I got the baby things Mrs. Ames wanted, and that new dress I promised Jackson's wife. And you should see the frozen corsage I got Bill to give to Helen. She'll go into a twelfth-level spin when she sees it."

It amazed Pete. This ordinary redhead on his arm, babbling like a schoolgirl. It amazed him constantly that she was the second-best man in radiation research on the Asteroid—next to himself. But then it wasn't true that she was just an ordinary redhead. He'd have to make it a point to tell her that—sometime.

The others were gathered at the field when Pete and Marla arrived after a late luncheon. They were a gay holiday group, the twenty whose turn it was to be on the monthly business trip and shopping spree to Earth. Pete always regretted when necessity forced him to be on one of the trips. It seemed like so much time wasted. But time had not dragged this trip. Marla was responsible for that, he admitted to himself.

Sam Underhill, captain of the *Eros*, waited stiffly precise at the port. He saluted Pete.

"Everyone's here, sir. We can take off any time."

"Fine. The sooner, the better. Oh—Sam, was there a crate or package delivered here from Astronaval?"

"In the instrument hold, sir. Instructions were that it was your personal property and

was to be given the special Gravitmount in transit."

"They would be—" Pete muttered.

"Pardon, sir?"

But Pete was already within the ship, following Marla Ipson down the corridor. He went immediately to his stateroom for a bath and change of clothing.

No sense of motion disturbed his bath as the *Eros* took off. Pete took pride in that. The *Eros* was only an old battle tub that the brain pool in Astronaval had condescended to commission for the use of the scientists on Radiation Asteroid. But Pete had fixed it up more luxuriously than the most palatial of the regular liners. It was his hobby. And it was tremendous satisfaction to know that the *Eros* was the only ship in space in which a man could indulge in a shower bath during take-off.

Marla Ipson was lounging in a deck chair on the observation deck when Pete found her. She looked as clean and cool as a comet's tail, which was exactly the effect she had planned.

"You must have a split personality," said Pete. "No woman could be the radiation expert you are and dress like that."

"Now that that's over you can tell me what happened today when you saw Dogpuss," she said with cautious flippancy.

He dropped into a chair beside her. "Can't we just talk about the pleasant things of life? Or maybe you could close your eyes and just let me sit here and look at you. Day after tomorrow you'll have your overalls on and be smeared clear up to here and *jiptus* bugs know when I'll see you like this again."

"Give." Her crystal eyes held him with blue smiling insistence. "I want to know whether I can finish my research during this next year or whether they're going to scatter us to the twenty-eighth dimension."

"All right." Pete sighed and related the details of the interview. "And so we're headed back to Radiation Asteroid carrying this little magic-lantern outfit that Hardin dug up from some place known only to the master minds of Astronaval."

He straightened suddenly. "Say, I hadn't thought of it, but maybe you'd like to take a fling at it. It's sort of down your alley. Hardin would accept your report on it. All you have to do is find out how the thing ticks."

"No, thanks, brother." Marla fanned her face with her hand. "I'm steering clear of Boris Hardin's gadgets. I remember the time he wanted some crackpot's radiation range finder examined. I nearly blew up the Asteroid."

"I'll pan it off on somebody—or shelve it permanently somehow. Damned if I'll waste my good time on the thing with all the projects I've got lined up."

"Seriously, Pete"—Marla's voice became suddenly anxious as she turned to face him directly—"I'm beginning to be a little worried about what Astronaval keeps saying about the Korphs. What if they're right?"

"They're not right. I tell you I've lived with those Korphs. I know their psychology. I know how they live and think and feel. As a race, they've got a whale of an inferiority complex. They compensate for it by associating with the superior peoples of Earth, and get a sort of reflected glory out of our commerce and intercourse with them. They would never think of warring with those they regard as their masters, as they do us."

"But can you be sure? You're a physicist. You know nothing of psychology."

"I know enough of the scientific method," he said, a trifle stiffly, "to be a far better judge of the Korphs than the militarists, whose entire existence is one of perpetual frustration—looking for a war and not finding one within their grasp. It's no wonder they drive themselves into a frenzy over any tiny occurrence that might give them an excuse to start a war.

"It's too bad they couldn't have picked on somebody besides the Korphs, though. It would be hard to find a more inoffensive race."

"But this rumor of the Artificial Sky—the model Hardin gave you. What about that?"

"In what age hasn't there been the dream of the perfect weapon? And when in the last four hundred years hasn't there been a rumor of a ray screen or energy field that would block all penetration, mechanical, radiative, or otherwise?"

"I know, but—"

"You know that such a field, screen, or what-have-you is impossible. You've stumbled across the proof yourself a hundred times, showing that no such field is possible. The Artificial Sky is supposed to be such a field. Therefore, the Artificial Sky is impossible."

"But there must be *something*," Marla insisted.

"There is. There's a compartment unhinged in the mind of every militarist where such concepts are bred and nurtured. This Sky is supposed to have an artificial sun attached to it,

the radiation of which is controlled. The sun can be made to burn a planet to a crisp or freeze it colder than Pluto's pants by changing in some miraculous manner to the perfect Black Body. It's all so silly it's an insult for Hardin to order us to spend time on it."

"Dinner is served, sir."

They looked up at the abrupt sound of the voice. Captain Sam Underhill stood smiling and trim. "I hope I have the honor of your presence at the captain's table."

"Sure, Sam—provided you make the cook prepare some of our old favorite, Venusian swamp turtle. I don't think Marla has tasted that lately. Have you?"

He offered his hand, and the girl took it mechanically, but her eyes were staring in sudden horror. Pete saw and grinned.

Sam Underhill's cap, which he constantly wore low on his head, had become a trifle upset and the entire upper lobes of his ears could be seen. Lobes that extended an inch above the level of his temples.

"We're having just that," he said. "Choicest turtles Venus ever grew. I hope you'll enjoy them."

"Captain Underhill"—Marla's voice trembled—"I didn't know you are part Korph—"

He bowed low as if acknowledging a great compliment. "My great-grandfather was the first of his race to receive the Earth explorers and open the world of Venus to interstellar commerce. I thought everyone knew. It's an ancestry of which I am very proud."

"Yes, I should imagine—"

They began walking toward the dining room.

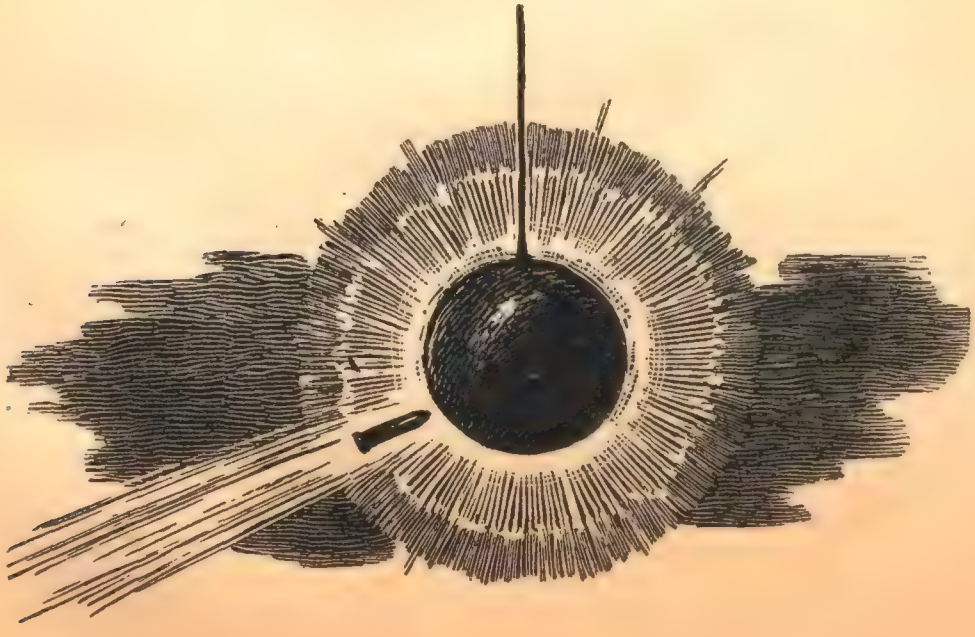
"You see," Captain Sam Underhill went on, "in those days my father's people were a very backward race. All Venus was divided into little tribes, each one selfishly clinging to its own traditions and accomplishments like adolescent children. It was not until the Earthmen came that they saw the advantages of the exchange of ideas. It was not until then that they understood the advantages of —shall I say *learning*?—in contrast to their old ways of *conserving* the tiny, insignificant accomplishments they had built up through centuries—most of them built on error, as are almost all traditions."

"Venus is pretty grateful to Earth for changes that have resulted through this new contact, isn't she?" said Pete.

"Indeed—that's why the day of the landing of the first spaceship from Earth is a national Venusian holiday. The Korphs give tribute to the Earthmen who came and showed them a vision of new worlds. But here we are . . . the dining room is ready."

Radiation Asteroid is a tiny, man-made outpost a hundred miles in diameter. It swings in Earth's orbit a hundred and eighty degrees away. It was built during the first and only interstellar war involving Earth, the Martian conflict of half a century ago. Then it was a military outpost.

After the war the military command at



Astronaval designated the asteroid a research post in radiation. That was their fatal mistake. Never since had it been possible to convince the pacific-minded Council that the asteroid should be refortified, and it swung invitingly—to the minds of the military—as a stepping-stone in any invasion from the outer reaches of space. Even the Korphs would seize it first, should they declare war, because it presented a serious threat of rear attack should strong Earth forces ever occupy it.

To Pete and Marla and the others who looked down upon the Asteroid three days later it looked as if they were returning to Earth. The tiny world had been laid out to conform to the topography of Earth.

The *Eros* set a course for headquarters—the Kansas City of the little American continent.

Pete and Marla were watching the landing. Beside them stood blond Hank Peterson and Norma, his wife. They had been married while on the visit to Earth.

"It looks so peaceful," said Norma. "I must be just a small-town gal, because Earth always seems too big for me. I seem to fit about right on Radiation Asteroid."

"I wonder how long it will remain peaceful," said Marla, "if Boris Hardin should prove correct in his beliefs—"

"Stop it!" snapped Pete. "We've all got important work to do down there. We can't be gumming up our brains with such crazy notions. I don't want to hear Boris Hardin's name mentioned after we land. That's an order to everyone on this ship."

"Yes, master," murmured Marla so that only Pete heard. He glared down at her whimsical smile.

The sun came up every twenty-four hours just as it did on Earth. The Asteroid had been set at the same inclination, given the same period of rotation and the same strength of gravity. It was even a rooster crowing that wakened Pete Wilson the next morning.

The scientists and their families who occupied Radiation Asteroid were a bunch of rustics by their own admission. South America was a cattle ranch, while Europe supported truck crops and chickens. The rest of the continents were devoted to laboratories.

Life on Radiation Asteroid was as utopian as the smell of earth farming and atomic transmutation could make it.

Pete blinked hard at the blazing sunlight streaming in the window. Then he sprang up anxiously, remembering that he was back home and that a laboratory full of endless research was waiting.

He blinked hard again at the clock built into the foot of his bed. Powered by a milligram of U-235 it should have run exactly on time for at least a dozen more centuries before it needed repowering. But it was apparently slow this morning. It was light as midmorning outside, but the clock said only 4 a. m.

He dressed and ate quickly and left the building without seeing anyone. He stepped out on the fixed walk toward the laboratory, eager to get to work until he suddenly remembered Boris Hardin's model machine that was waiting for his attention. Still, he had to admit to himself that the thing was clever. He wondered exactly how the effect of slowing down the bullet was produced. It was a neat trick and probably of some value—as the militarists viewed values.

The sun was halfway over the near horizon. He watched it between a couple of distant buildings that seemed to tip toward it on the sharp curvature of the tiny world.

Then he stopped. He stared at the rising disk until it blinded him and forced his eyes shut. When he could see again, he looked up at the sky, at the burnished sky that domed over him like an incandescent copper bowl. And in that terrible heat that began to assail him, he felt a chill.

He knew his clock had not been wrong. The sun was not due to rise for an hour yet. This thing that was edging over the horizon was no sun; it was a monstrous atomic flame that was licking the planetoid clean of life like a welding torch advancing over an ant hill.

He ran. The burning air cut in and out of his lungs, drying his body with each breath that was like the blast of a curing oven. In the distance now he could see the rising tempo of activity as the city's inhabitants began milling about, seeking their stations in their laboratories to measure the monster.

There was a sudden whir in the air beside Wilson and a transparent Egg the length of a man appeared. A section slid down as the Egg floated a foot above the ground.

"Want a lift, Pete? I got a call from the lab. Hank says hell's loose on the other side of the Asteroid. Thought I'd better get over in the Egg instead of walking."

It was Bill Ames, First Assistant in the Radiation Section.

"Any details?" snapped Pete.

"Nothing except that this blazing ball appeared in the sky about a quarter of an hour ago and has been rotating around us like a sun. It's about three thousand miles away. Any idea what it is?"

Pete knew what it *could* be, but his mind refused to believe that it was the Artificial Sky. He had proof, indisputable equations that showed the Artificial Sky was an absolute impossibility. Besides, six months Hardin had said the Korphs planned.

"I don't know, but if it's doing an orbit around us there's no use trying to keep everyone here to work on it. We'll evacuate to Earth as soon as we can get ships enough and investigate from space."

The Egg quickly reached the city and Bill nosed it skillfully to the roof landing over their office. They dropped to the tenth floor by elevator and entered their office. Marla was already there.

Her copper hair shown even more brightly in the gleam that was coming through the window. It was awry over one eyebrow as she hunched before the communicator.

"Calcutta . . . Kansas City calling Calcutta—"

She looked up as the two men entered. "Where've you been? I've been trying to raise you and so has everyone else on this Asteroid. I can't get half the communication centers. Even the central transmitter at New York is out."

The central transmitter was the giant beam sender that connected Radiation Asteroid with Earth.

"Never mind that," said Pete. "We're going to evacuate the Asteroid. We've got to have ships. The *Eros* can take one load and take word if nothing else can be done. I'll see to that while you get out an emergency warning. Order everyone into the radiation pits and prepare to leave for Earth."

Marla stood erect, defiant. "Pete! Come to your senses! You can't get through! That's the Artificial Sky out there. Our precious equations and little air-tight theories are just so much scrap paper. The Korphs have struck. Where is your proof now that the Artificial Sky can't exist?"

The two men tightened their jaws. Marla had spoken the fears that were in the mind of every man and woman on Radiation Asteroid.

"Our equations are right," Pete stated flatly. "Whatever that is out there—Artificial Sky or not—no such impenetrable force field as that is supposed to be can exist."

Marla whirled away.

"If she's right, the Korphs must be attacking Earth, too," said Bill. "I wonder if we could get through on the multilevel transmitter on the *Eros*."

"I'll see if I can get hold of Underhill."

Pete stepped to the communicator. In a moment, the field attendant's face appeared on the screen. "Space field. . . . Hello, Pete. I've been looking all over for you. I've got a box I was supposed to deliver to your lab personally, but I couldn't find you last night or this morning. Marla said she didn't—"

That would be Boris Hardin's model. Pete had wished that it had become lost, but now it became of vital importance to have that model. There was something there—

"I know—I just got here. I want that box, Arnold, and I want it safe. Guard it with your life. Bring it to me at once. Is the *Eros* ready to fly? And is Captain Underhill anywhere around?"

"That long-eared Venie hasn't been around since the *Eros* landed. Why don't you put him in the mummy tank, Pete? I don't trust him. He's too damn polite—and the *Eros* can go any time."

"I'll be the judge of Captain Underhill's loyalty. Get that case over here at once!"

"Before you can switch off!"

The screen went blank, but almost instantly it lighted again. The frantic face of Eggers, operator at the central transmitter, appeared.

"Pete—that you? I've been trying for an hour to get you. Something went wrong here. I can't figure out what. But just before this blazing ball rode into the sky I got a message from Boris Hardin for you.

"He said: 'War declared. Earth surrounded by Artificial Sky. Swim, damn you, swim!' That's all."

The screen blanked and Pete stood staring with unseeing eyes at the vacant surface for a long minute.

"What did Hardin mean by 'swim'?" Bill asked. "Some sort of code message?"

"Yes—" Pete nodded slowly at last. "A little code check word between me and Boris Hardin. It means that we're going to fry like fish in an oven if we don't find a way out of here. We're on our own, now."

But Marla was bitter. She stared as if at some horror out of a nightmare.

"We were wrong," she said flatly, "and the militarists were right. Only Boris Hardin said it would be six months. It wasn't even six days. And all our theories—our utopias—now you can see why the militarists can afford to wait patiently through the long years of peace. They can wait because they're sure of victory in the end. There'll always be war to justify their profession!"

Pete turned away from her. "Snap out of it, Marla! You continue as before. Take charge of getting everyone into the radiation pits. See that food and water and sanitary provisions are in order. Bill, you send up one of our sounding rockets and see if you can get it through that 'Sky' or whatever it is. I won't believe it's impenetrable until I prove it. Check with the main observatory and get a curve on the rocket's flight."

"Check."

Bill jumped to carry out his duties, and Marla was already at the intercommunication screen that connected with the emergency warning system.

Pete strode into the main laboratory where a dozen of the researchers were intent upon measurements of the phenomena.

Grizzled Doc Johnson, head of the division, looked up from his recorder. "We've turned every kind of beam we know how to generate on that Sky. Its reflection is one hundred percent."

"Regular communication beams and the new attack beams as well?"

Doc Johnson nodded. "From one end of the spectrum to the other. Nothing gets through. It's utterly inconceivable."

"I know. But it's there. It may be that there is a specific and unique angle of refraction. Try to find it. Check on that sun, too."

"That's nothing but an ordinary controlled-reaction nucleus. But I'd like to know where the control is—"

"Report as soon as you find anything. I'll have something to show you in a minute."

Pete raced down the corridor outside the laboratory toward the elevator. He was growing anxious over the model Hardin had given him. Arnold should have been there with it long ago. That model, he felt, was utterly necessary to their existence, now. If anything happened to it—

"Hey, Pete!"

Bill emerged from the door of the auxiliary observatory room. "Want to see the results on the run?"

Wordlessly, Pete entered the observatory. There on a screen hung the image of the two-foot sounding rocket used for making radiation soundings into the space around the Asteroid.

"Just hanging there," said Bill. "It's still moving about ten feet an hour, but it will soon be stationary at the rate it's decelerating."

Together, the two scientists stared at the imperceptibly moving rocket. Finally, Pete shook his head. "Got any ideas?"

"Total blank. Here's something, though. Look at this curve, showing rate of deceleration."

Bill opened the lid of an automatic integrator that was attached to the telescopes focused on the rocket. The pen was drawing a long sloping curve gently approaching an asymptote.

"Hyperbolic," said Bill. "If that's correct, it means that the rocket will never become quite stationary, but will continue to move at an infinitely decreasing speed."

"Not likely. Too much error in this integrator. There's got to be a line of discontinuity somewhere. That thing can't just park up there and move forever."

"Don't forget it isn't just parked up there. It's locked tight in a force field that is supposed to be absolutely impossible. We're handling something entirely new. I've got a hunch it's approaching that field in a true hyperbolic function with respect to velocity. That means it's forever approaching, but never reaching the field—like Zeno's tortise, or was it his rabbit? I forget which."

"Got a check on the height?"

"Two thousand eight hundred and eighty miles and some odd pieces."

"O. K. Keep the 'scope on it. I'm going out to the field and pick up Hardin's model. Maybe it would be a good idea if you came along."

Together, they entered the tiny Egg on the roof and took off. The field was four miles away in the deserts of Arizona.

They had made Radiation Asteroid as exact a duplicate of Earth as possible, and no imagination had been spared in making the desert Southwest a replica of the burning oven it was in reality. Dust whirls rose and sped upward on adiabatic wings. Cumulus formed overhead, above the low mountains.

"We could have a good thunderstorm if we shot some Gulf air in here," mused Bill.

"The entire Asteroid is going to be one ball of fire, and lightning and all the weather controls we've got won't stop it if this heat goes on another twenty-four hours. Have you thought what it's going to do with that impenetrable Sky overhead—the greenhouse effect?"

Bill paled. "I'd never thought of it." He made a hasty mental calculation. "That means that with no outward radiation the temperature will rise to at least a hundred and eighty degrees in twenty-four hours!"

"Right. You can see how many days we've got to work this thing out."

They circled low over the field. It lay shimmering dust-brown in the baking heat. On the north side, the hangar and repair shop looked deserted. Pete felt a chill of premonition. "I don't like the looks of this."

"Possibly everyone left under Marla's instructions to hit for the pits. There's no reason why anyone should stay on duty here."

The Egg floated silently to Earth in front of the hangar where the *Eros* lay. They stepped from the brilliance of the flaming sun into the half darkness of the building and stumbled against the burned wreckage just inside the doorway.

It was an Egg that looked as if it had been blasted in midair just as it rose to a take-off. The outer shell was half burned away. The inner contents were a mass of charred and twisted metal—and flesh.

"Who is it?" gasped Bill.

"It's Arnold's Egg," said Pete flatly. His voice was impersonal toward the man who had died in there, but only because of the secret, numbing fear that foamed up within him.

His fear was confirmed when he pried open the melted storage compartment of the Egg. Within lay the charred remains of a crate and a blackened base covered with alien electrical devices now fused in an indistinguishable mass.

"It's Hardin's model. Someone got Arnold just as he took off to bring it to me."

Pete's voice bespoke none of the shock that went through him, the near-nausea that took hold of him.

He had no illusions now about the power that sought their destruction. For the first time in his life he had seen murder, and it was the more horrible because he knew that it had not been directed merely at Arnold. The man had been only an obstruction, his murder only a tool in a complicated web of events directed at Pete and the colony of scientists on Radiation Asteroid.

He shook himself. "Let's get back to the labs. Nothing can be accomplished here. We'll send someone for Arnold's body."

"I suppose it's really useless, but don't you want to try the *Eros'* transmitter? Look!"

Bill gave a sudden gasp and jerked an arm wildly toward the graceful ship.

Yellow fingers of light were beckoning through the portholes all the way from the lower reaction chambers to the bow more than a hundred feet above their heads.

"She's on fire—every level! If she goes, we'll never get off this Asteroid!"

Pete whirled and started on a run toward the elevator that led to the top of the ship. If he could make the control chamber, run the ship out to the Gulf and flood it— He wondered why the automatic fire system had failed. Sabotage?

Then he saw the wreckage of the elevator. It was all but toppling on top of them.

"The Egg!" he yelled. "Let's get to the top in her."

The ports were now solid yellow circles of wavering light. The men knew the entire inside of the ship must be gutted.

"It's no use," said Bill. "She's a total loss right now."

"If she is, so are we. Come on!"

The fragile shell rose over the inferno of the spaceship. A dull explosion shook the hangar. A spurt of flame jutted from a port near the base.

Swiftly, Bill jockeyed the Egg to the nose of the *Eros*. Pete slipped the panel down and reached for the emergency outside entrance lock. He drew the port open and the roar of a blast furnace greeted their ears.

"You're crazy, Pete, if you think you can go in there and live. Let's get away before she blows again."

But Bill was talking to empty air. Pete had already leaped into the mouth of the furnace. Billowing fumes hid him from view.

Cursing, the assistant set the controls of the Egg and followed. He leaped into the blinding inferno and groped. His hands caught Pete's arm. Then, through a clearing in the smoke, they saw a figure across the chamber from them.

It was Sam Underhill, the half-breed captain of the *Eros*.

"So—I get more than I bargained for. The

mighty genius, Pete Wilson, and his shadow, Bill Ames. My grandparent will rejoice exceedingly."

"What are you talking about? Drop that gun!" Pete ordered.

"Go ahead—beg for your lives, pitiful little Earthmen. Before you die you shall know that I have fulfilled my destiny. I was born to destroy Earthmen and their creations. There are many thousands of us, born of unwilling Earth mothers, who were ordained to this high destiny in the plan conceived by my grandfather the day the first Earthman landed on Venus. Ah, yes, that day is our national holiday, but not for the reason you stupid fools have always thought—not to celebrate the coming of the Earthmen, but to celebrate the day they would be destroyed and driven from Venus and the universe. Our plans have been long, but we have been patient. Now, our reward is near. And you, Earthmen, shall presently become frozen cinders spinning through space on a dead asteroid."

With a catlike move, the sleek Venusian was across the room and poised in the opening. He turned and aimed the gun into the heart of the floating Egg. Flame exploded and the little ship plummeted to the floor of the hangar.

Then, with an unholy light in his eyes, Sam Underhill leaped outward.

With no second thought for the traitorous captain, Pete whirled to the controls of the *Eros* before the half-breed's body had completed the hundred-foot fall.

He tripped the starting button that activated the ignitors. No answering indication appeared on the dials above the button. The power was dead. Yet, cautiously, he advanced the fuel-feed lever, half hoping the motors would catch hold by some miracle.

No sound came but the roaring of the flames below and about them.

"Not a chance," said Bill. "It's the last trick—and that damned half-breed Korph has taken it—"

Desperately, he opened a companionway hatch. A smothering blast of burning gas leaped at them, enveloping Bill. He staggered back and the hatch slammed shut. Singed flesh and hair scented the air.

"Not that way. The *Eros* is done for, all right. We'll try to get out in the lifeboats. Take the starboard; I'll take the port."

Bill nodded agreement. It was the one final chance of escape from the disintegrating ship.

A narrow escape hatch led directly from each side of the control chamber to the respective lifeboats. They opened these and found the flames had not yet penetrated the nacelles where the craft lay.

Pete dropped down the chute; he glimpsed Bill's head disappearing below the floor level opposite him. The walls of the chute were unbearable to the touch and the air in the narrow confines was like a Bessemer blast. But the lifeboat seemed to be safe.

It was dark in the chamber. Sweat pouring from his body, Pete searched in the blackness for the handle of the door. He found it at last and crept within the lifeboat.

Instantly, the lights and air-conditioning equipment went into action. A cool breeze fanned over his body and Pete felt new life surge into him. He checked the controls briefly. The half-breed traitor had obviously forgotten all about the lifeboats, taking it for granted that they would be destroyed with the rest of the ship.

Pete pressed the lever that operated the port through which the life craft would burst from the side of the *Eros*. The lever swung to the limit of its arc.

Nothing happened.

Sweat burst anew on Pete's forehead. If the lifeboat couldn't get out of the nacelle, he was as bad off as ever. He left the ship and went out to inspect the port. In the darkness, his fingers passed over the lock mechanism.

Then he knew that Sam Underhill had not overlooked the life craft. The mechanism was irreparably jammed. That had been easier for the saboteur than wrecking the ships. He had taken no chance that any last-minute salvaging would save any usable flier. There was no means whatever of leaving Radiation Asteroid, now.

But neither was there any way for the men to leave the lonely, black and sweltering nacelles where they were trapped.

In the pit that nestled like a heat-raised blister in the side of the *Eros*, Pete gave way to despair. He pictured Bill on the other side of the ship in the same trap. They were doomed. If the heat didn't broil them alive, the explosion of the igniter chambers would soon get them, for the flames must be nearly through the fuel cavities.

Explosion!

The thought blasted in his mind. He whirled and raced back into the life craft and sealed the door. Then steadily and slowly he opened the igniter jets and left the power off. A faint hissing came to his ears as the powerful thyolite escaped into the nacelle. He checked the pressure at three atmospheres on the testing dial connected with the exterior of the ship.

Now was the moment. In an instant, if the lock mechanism of the nacelle proved weaker than the hull plates of the life craft, he would be free. Otherwise—it would be over, in that same brief instant—

He pressed the power switch and rammed home the fuel lever.

Thunder rocked the universe. The tiny craft twisted and hurled about as if thrown by a mighty hand. A slashing blow glanced off the side and flung it away in a new direction. Then, abruptly, all was calmness. The lights were out, but through the ports came the copper blaze of the Artificial Sky as the blazing pseudo sun burned in upon Pete.

He rocked in the pilot chair and shook his head. The craft was flying slowly at five hundred feet above the surface. The explosion had blown the nacelle port wide open and hurled him through the roof of the hangar. Flames were now leaping through it and licking at the structure.

He looked frantically about the sky for signs of Bill in the other ship. Nothing was visible except the city in the distance, lying staggered by the heat.

Pete turned toward it. There was nothing humanly possible that he could do for Bill, trapped in the other nacelle. He bowed his head an instant and pressed his jaws tightly, and went on.

Then, at that instant, a terrific explosion roared below him and the hangar spewed flame. And in its midst rose a tiny ship, soaring to-

ward the sky. It reeled crazily and spun end over end. Then at last it righted and sped off parallel to the surface.

The blast of Pete's escape had inspired Bill to the same tactics.

A voice was rising in the radiation pit. It needled out through the long, staggered corridor in the fifty-foot lead walls.

"It's the vengeance of God! Do you think for one moment that He would have given the Korphs power over us if we had lived as we should? You all know the answer to that. Therefore, let us repent. Let us pray that it may not be too late to be worthy of some small mercy."

"Mamma, please—" Little Jed Murphy, assistant in the biological section, tugged timidly at the vast periphery of his wife's skirt. "Sit down, Mamma. Everybody's looking at you."

"Sure, they are, Jed. They know I'm talking the truth, and when death is close to a body, he likes to hear the truth. Isn't that so?"

"Sure, it is, Mamma Murphy. Keep on talking to us." A pale young woman with a baby in her arms smiled from across the chamber.

Every person on Radiation Asteroid had been the subject of Mamma Murphy's mothering or scolding at one time or another. And none would deny her the right to her hell-and-damnation preaching which she pursued vigorously. She had been married to a militant evangelist before she married Jed Murphy, and this was her day. The fifty who were gathered in this pit would hear preaching such as had never been heard before.

"What shall we do to repent?" called Ted Innes, field chemist.

Her recommendations were interrupted. Out of the tiny corridor stepped Pete Wilson and Marla Ipson. Their eyes were bloodshot and their faces burned, but they looked around the room with reassurance.

"Looks like everything is going all right down here," smiled Marla.

"Just as right as can be, honey," said Mamma Murphy boisterously. "Shall we tell 'em we're all right, folks?"

A chorus of assents responded.

"How is everything coming?" asked Jed. "Isn't there anything any of us can do?"

Pete shook his head. "It's a job for the radiation crew. Just as soon as anyone is needed, he'll be called. There's plenty of room in some of the other pits if anyone is crowded here."

"Seems like it's getting pretty hot," said Ted.

"You should see it outside," replied Pete grimly. "A hundred and sixty."

A hush fell over the group. "We can't hold out long at that rate," someone breathed.

"Nonsense!" exclaimed Mamma Murphy. "We'll have some healthy preaching and repenting down here while they work upstairs, and we'll see just how long we can hold out."

Pete patted her on the back. "Keep it up, Mamma, and we'll be O. K."

"These equations are right!" Pete slapped the sheaf of papers in front of him. "They prove that no such force field can exist; therefore, it doesn't exist."

"All right, all right," said Bill wearily. "I'll take your word for it. But what *is* that out there that's cutting us off?"

"That's what I'm going to find out. I'm taking up one of the life craft from the *Eros* and get as close as I can to the Sky."

"It's too dangerous! How do you know when it grabs hold? We've tried shooting rockets to just graze it and bring down readings on it. Not one has returned when it got within ten miles of the Sky. You'll probably get caught and hang there until your skeleton falls apart. If only we had Hardin's model!"

Pete grunted unintelligibly and began checking off the list of equipment to be carried aloft.

It was late in the afternoon when they finished loading. The temperature had begun to fall off rapidly and was down to a hundred and thirty-five. The humidity of sixty percent made it impossible for a man to work more than five or six minutes in the atmosphere without protection.

Pete settled himself in the cockpit of the twelve-man ship and caught a radio check from Bill.

"Three meters—check."

"Three meters—check."

The ship lifted from the roof and stabbed into the burning air. It could have covered the distance to the Artificial Sky in short minutes if Pete had let it out, but he dared not increase the speed much beyond fifteen hundred miles an hour.

He stared behind at the burning Asteroid. Reports from outlying centers had indicated nearly all the animals dead. Titanic thunderstorms had broken loose from the weather controls in some sectors and had wreaked havoc

among the flimsy open-air huts, especially in South America.

The real sun was entirely invisible through the copper sky. The artificial sun was fading below the horizon, but becoming visible again as the lifeboat soared upward.

At twenty-seven hundred miles he switched on the constant-tone beam for a check with Bill.

"How's the temperature?" he called. The surface below was invisible now, hidden in the shadow of night.

"Dropping. It's down to seventy. There's a terrific wind springing up. The weather control can't touch it. What do you suppose we're in for?"

Pete remembered the words of Boris Hardin: "—and then will come the blizzards, and howling wind and blowing snow."

He gritted his teeth to choke down the bitter flame of hate and anger that rose up within him.

But now there was no time for that. The indicators showed he was rapidly approaching the limit of safety in his flight.

"I'm at the top," he said. "Keep your 'scopes on me and check my position. I'm right underneath the first test rocket we sent up. It's about sixty miles up."

"Take it easy," said Bill. "Your speed is beginning to cut down along the hyperbolic right now."

Pete glanced at his dials. "You're crazy. I just cut it manually. It couldn't show anything but a straight line. I've got gravity cut."

"Then this integrator is completely haywire. What's the matter with your voice? You sound like you're talking from the third subbasement. I can hardly understand you."

"I was going to ask the same thing. You sound like a super-soprano murdering an aria. Bill! What's wrong?"

"You're slowing down—just like the rock—"

His voice whined beyond the point of audibility and vanished. And then Pete noticed that the constant-frequency beam had likewise disappeared. Frantically, he punched the volume indicator. The beam was still on.

This inexplicable effect of the Sky had cut him completely off from the Asteroid below, yet he felt no untoward physical effects. The ship was cruising at normal speed; all instruments were functioning perfectly. He shelved the mystery for the moment and turned to the maze of recorders that surrounded him in the cabin.

He shot a high-frequency beam directly overhead into the Artificial Sky. By means of the reflected beam he measured the distance to the reflecting layer. According to his calculations it should be less than fifteen miles away.

It was over one hundred miles above him.

The artificial sun was still visible. But now, instead of the copper ball, there was a brilliant blue-white disk. He mistrusted the evidence of his vision and checked the frequency of the radiation. It was into the blue-white well enough.

Abruptly the disk vanished behind the Asteroid. Pete cautiously advanced the ship upward, edging closer to the impenetrable layer. So far there was no indication of its impenetrability. No force had slowed the ship in any degree. It cruised about in a slow circle beneath the suspended test rocket.

But now Pete noticed that the test rocket itself was rising. He checked it with the instruments. Its velocity was over a hundred times the slow creeping that had been barely detectable before he took off. What force had started the motion?

Impulsively, Pete nosed the ship up to overtake the test rocket, but a warning premonition overcame him. He remembered the sight of that rocket hanging there during the long burning hours of the day with no perceptible motion.

The automatic recorders in the various instruments did their work swiftly on all the phenomena within range of the life craft. Yet Pete had not encountered a single fact that shed light on the mystery of the Sky. Nothing he could see or sense except a sort of dull grayness far above him could be connected in any way with their imprisonment. As far as he knew, the ship was free to plunge on up into the depths of space just as the test rocket was now doing.

Only the gnawing fear kept him from following. Reluctantly, he turned the ship downward again.

Eager to begin analyzing the records, he turned up the speed. Four, five, six thousand miles an hour. That was the safe limit so close to the Asteroid.

He was surprised, minutes later, to see the violet tinge of dawn appear around the curve of the Asteroid. Then the blazing blue-white sun burst upon him again. At the start of his ascent that sun had been in a steady twenty-four-hour period of rotation. Yet it had ac-

complished half a revolution in less than an hour.

The landscape he looked down upon made him catch his breath. It was blinding white. For a moment, he thought it was merely the unaccustomed light after he had been in darkness. Then he recognized it for what it was. Snow.

Something incredible had happened while he had been gone.

He reached for the radio switch once more in a vain hope of reaching Bill.

"Lifeboat No. 1—Pete Wilson—calling Bill Ames. Calling Bill Ames."

The receiver responded with an eerie high-pitched howl that wavered meaninglessly up and down the scale. Then, suddenly, the beam frequency came on, so high that it hurt the eardrums. But slowly it was descending the scale. After an interminable time it approached normal frequency.

Then the radio boomed out with Bill's urgent voice: "Calling Lifeboat No. 1, calling—"

"Bill! What happened? Is everything all right down there?"

"Pete! You're safe—" It was Marla's voice.

"Sure, I'm safe. Had a pleasant little trip up here. But what about you?"

"We thought you'd never come back," said Bill. "After six hours of watching you hang there beneath the test rocket—"

"Six hours! You're crazy. It's been less than three since I took off."

"It's been exactly eleven and a half!"

Pete stared in bewilderment at the atomic clock. Something was wrong. No field could affect that mechanism. Besides, he had passed through no field. And in addition to the atomic clock there were at least twenty others in the form of the automatic recorders. They wouldn't all show the same deviation—provided there had been deviation. Besides, he *knew* he hadn't been gone eleven hours.

"Why don't you come down faster?" asked Bill. "Is anything wrong with the ship?"

"Faster? Man, I'd go clear on through the Asteroid. I'm up to sixty-eight hundred now."

Pete heard a gasp and an unintelligible whispering of voices behind the microphone. A sudden unaccountable chill went over him. There was something queer. Something that Bill and Marla knew that he didn't.

"Pete, you'd better check your gauges again," said Bill. "You are coming down at a rate of exactly five hundred and six miles per hour. It'll be another four hours before you get here at that rate. Can't you put on a little more speed?"

The lifeboat speared out of the sunlight—sunlight that had become to Pete its old hue of burned copper instead of the blinding blue-violet.

He shot at uncontrollable speed over the roof of the radiation laboratory and sped into the air again. Twice more he overshot the roof, then succeeded in a landing on the snow-covered surface.

The snow was two feet deep but melting in torrents under the flaming sun.

Bill and Marla met him, but there was restraint in their manner. He noticed it in Doc Johnson and the others in the laboratory.

"What's the matter with everyone?" he half snarled. "Have I got a plague or something?"

"No—it's nothing like that, Pete," said Marla. "It's got us all, I guess. It's Mamma Murphy."

"Mamma Murphy? What about her?"

"After it got dark the blizzard came and along about midnight Mamma Murphy started shouting and preaching again. It got so bad we had to take her to a room by herself, but she got away and said that since we wouldn't repent she would accept the call to atone for us all. She broke away and went out into the blizzard. She froze to death before she got a hundred feet away."

It was a new and terrible feeling, the yearning for vengeance that pervaded Pete. His life had been spent in the laboratory, as free as possible from destructive emotion. Now rage and frustration stormed through him, and it was a bitter experience.

The heat rose stifling again, smothering like a contraction of space itself. The staff of the laboratory worked up the charts and analyzed their curves that told the story of Pete's flight to the Artificial Sky.

The first result was that every record made a perfect time check. Not a clock showed any appreciable deviation.

"There's the clue to the whole thing," said Pete, "but I can't grasp it. It hovers in my mind like a half-forgotten equation—all there except the critical factors. What happened, anyway? Was it purely a subjective, psychological illusion caused by the Sky, or does it have physical meaning?"

"It could hardly be subjective or psychological, since we experienced it at both ends," said Bill. "Except that it was sort of in reverse.

Radio signals from here became so high pitched you couldn't hear them and yours became so low we couldn't understand them. Then the matter of your velocity. You thought you were traveling at a much greater speed than we measured for you. And the test rocket—you thought it speeded up while our records show that it has constantly declined in velocity."

Pete nodded thoughtfully. "Even the speed of the artificial sun's revolution. You swear that it came up normally, yet my clock showed a night of only a little more than an hour. There ought to be a common denominator for all those phenomena."

He paced back and forth in the room, staring at the recorder charts in his hand. Then he stopped and looked up slowly.

"There is a common denominator," he said with suppressed emotion. "Don't you see it? It's the time rate of change. In every instance, the same phenomena appeared to me to take place at a higher time rate than it did to you."

"You're right!" exclaimed Marla. "That would explain—"

"I'll say I'm right! We proved mathematically that no such electromagnetic field as the Artificial Sky was supposed to be could exist. It's nothing like that at all. It's an altered time field. Once inside the field, an observer doesn't even know he is there because his own perceptive processes are slowed down."

Sweat suddenly broke out on his forehead. "If I hadn't turned back when I did—"

"You'd have been sitting up there thinking you were traveling at half the speed of light and actually getting nowhere. It's funny you wouldn't notice the difference in astronomical motions."

"I did—the increased velocity of rotation of the artificial sun, but I didn't connect it up."

"How can we get through the altered time field then," asked Marla, "or, rather, why can't we just load up with fuel and plow through it? It would take a long time, maybe, but eventually we'd get through."

"Not if the velocity constantly approached zero as a limit, as it seems to be doing," said Bill. "We would never get through. But how is this time alteration generated?"

"Ever hear of the Kittredge Distortion?" asked Pete.

"No."

"It's an obscure effect discovered by an obscure researcher more than fifty years ago. He found that the speed of the common reaction between sulphuric acid and sodium hydroxide was measurably accelerated when in the presence of the delta element of cosmic rays which had been polarized along the r axis. You don't hear much of it any more."

"What's that got to do with this?"

"The Kittredge Distortion is definitely an alteration of the time field. I proved that in some work I did a couple of years ago. What we've got here in that Artificial Sky is nothing but a vast development of the Kittredge Distortion, I'll be willing to bet."

The sun set and rose again, a day of raging heat and howling, roaring blizzards that finally destroyed the weather controls and swept unhindered around the little planet. Every structure was flattened and shattered except the great laboratory buildings in which the population huddled.

Food shortage grew because it had been nearly time for the harvest of farm crops and little had been stored away for emergency use.

There was wonder and fear and hopelessness in the minds of the scientists as they pictured Earth with a great barrier sphere about her and an artificial sun inside it slowly broiling the life out of all living things on the home planet.

Under Pete's leadership they worked un-

ceasingly, but where they occasionally caught a few minutes of sleep, he worked straight through for sixty hours without stopping.

At the end of that time he had the equations of the Kittredge Distortion engraved on an integrator control plate.

"We're right, Bill," he said at last. "It's the old Kittredge effect all right. What it does is accelerate the flow of time, as it were, through a given space and creates a time jam. Any movement or action occurring there has to plow through that denser time zone, and, since rate is inversely proportional to time, the apparent rate falls off as the time to be overcome increases."

Marla listened, wide-eyed, then shook her head. "I can't picture *that*—speaking of time as if it were a mud puddle to wade through and the stickier it got, the slower you went."

"Nevertheless, that's the closest you'll ever get to a mechanical explanation of a phenomenon that can only be understood in terms of mathematical symbols."

"It accounts for the relative slowing down of all motion within the influence of the time jam," said Bill.

"But how are we to get through it?" asked Marla. "Two more days under the Artificial Sky will finish us. Three more are in the hospital, and Jed Murphy is probably beyond hope, since Mamma died. None of them can stand it much longer." Marla's face was white and drawn.

Pete's own bloodshot eyes looked down at her. "Take it easy. We'll get out of this jam, and when we do there'll be payment for the lives of Mamma Murphy and Bud Arnold."

He turned to Bill. "In crude mechanical terms, time is curved exactly as space is curved. What's happening out there in the Sky is, in effect, a revolution of time. All the time that ever has or will exist is spinning like a wheel about us. Don't try to understand that or you'll go bats. But, anyway, the object is to find the point on the time field that corresponds to our present, clamp onto it as it comes around and go through the field riding it."

"I'll take your word for it," said Bill. "How do we find the point and clamp on it?"

"We can built a synchronizer that will do the trick, now that we know the equations of the time jam.

"We must establish a certain motion outside the time jam and a corresponding motion inside. At one of an infinity of instants they will coincide. When that happens, the present will exist in the field and we will ride through. Send me a couple of draftsmen, and Doaks out of the electrical lab."

The quiet scholarship and intellectual nonchalance of the laboratories vanished. Under the direction of Pete Wilson's brain, a score of intricate, interworking mechanisms took shape.

The men of Radiation Asteroid were used to making their own equipment for their experiments, but there was hardly ever any hurry. Always there was a luxury of time to study the details of the problem at hand.

Now, the Artificial Sky with its sun and winds and blizzards was a whip that drove them to a mad frenzy of activity. There was no time to theorize and check and build, then abandon and start all over again if failure came. They had to be right the first time.

Pete knew they were right. The flame of his intellect was fueled by the deep, burning bitterness and hatred that lay within his soul.

Forty-eight hours later the night had left ten-foot snowdrifts atop the laboratory roof, but the rising sun would soon sublime the ice. Only in insulated spacesuits could the men venture into the open now.

The lifeboats of the *Eros* had been brought inside and both equipped with the time synchronizer. But they could not be tested. The only test would be the actual operation against the Sky.

"I'll take it up this afternoon," said Pete, "but I've got to get some sleep first or I won't be able to tell which way I'm going. I'll take a couple of hours."

"Yes, you'd better take time off for a while. Get some sleep and we'll call you," said Bill.

"See that you do."

As soon as Pete had gone and was safely asleep, Bill began to make the final preparations on the life craft.

"What's the idea?" asked Marla.

"If I told you, you might get the idea I was becoming noble. But you know as well as I do that this thing might flop. If it does and Pete's in it, who's left to tackle the problem again? You get the idea."

"Pete'll knock your head off when you come down. But you're a swell guy, Bill. I get the idea. The rest of us here won't forget it."

"O. K. Check me on the radio."

Marla watched the disappearing speck. It vanished and she picked it up on the screen,

watching it grow smaller and smaller against the copper Sky.

She knew that the synchronizer the ship was bearing aloft held the hope of the Earth. And she knew, too, that there was not another intellect in the System that could have produced it with as slim clues and short time as Pete Wilson had. She had sat across the table as the integrator clicked out equations and results of relationships that were obvious to Pete, but might have required months of research on the part of any other radiphysicist she knew.

It was understandable that the authorities in Astronaval should rate him the most valuable man that any government controlled in the field of military research. She prayed that his invention of the synchronizer had come quickly enough.

Her meditation was interrupted by Bill's booming voice. "Are you still there? I've reached the top."

Marla brought the interior of his ship to a focus. "Everything checks here."

"O. K. I'm going to release the synchro-unit. Wish us luck."

From the undercarriage of the ship a small torpedo-shaped projectile sped into the heart of the time jam. Burning atomic energy furiously, it plunged at terrific acceleration. But at less than fifty miles it slowed and came to a near stop.

Bill checked his instruments and threw a switch on the control panel.

"The synchronizer is in control now. As soon as it finds a point where the present exists, it will fire all the power this ship has got. The next voice you hear will be that of Bill Ames, describing the outside of the Artificial Sky—providing I can get back in once I get out—"

He had scarcely spoken when there was a whine of straining atomics, pouring their furious energies into the drive of the ship. The screen went instantly blank.

A wave of paralyzing relief swept through Marla. The ship had plunged through. Now there need be no fear of the Korphs or what they could do to Earth. The synchronizer was a success.

Marla wondered how long it would take for Bill to return. Theoretically, it should be possible to come back immediately. She focused the scanning beam upward and explored at random near the spot where he had vanished.

Then she uttered a sudden, sharp, involuntary cry. She hung to the controls. There, barely visible in the yellow light, the shadowy outline of a life craft hung motionless in space, as if frozen in a block of ice.

It was Bill, beyond doubt. He was locked, eternally trapped within the time jam. The synchronizer had somehow failed.

Marla laid her head on the table in front of the screen and gave way to sobs. Then, after a time, she reached beneath the table and opened a hidden compartment. She pressed a control and began calling the name most hated on Radiation Asteroid.

Pete slept soundly, but the alarm clock of his nervous system would not allow him very long. It was no more than two hours after he left the lab that he was walking down the corridor toward it again. He felt refreshed for any emergency the synchronizer might hand him.

He halted before the door of the laboratory as the sound of Marla's sobbing came through. He stiffened. The blood drained from his face as he heard snatches of her words: "—can't stand it much longer . . . will try . . . synchronizer was a failure . . . maybe some other method . . . doubtful . . . ready for him if he ever comes through—"

It was like a physical blow. Marla. It swept over him in a great engulfing wave how much she had come to mean to him. Marla—a part of this murderous plot.

He burst through the door.

"Where's the synchronizer?" he demanded.

"Bill—"

Chokingly, she explained the flight and failure of the ship. "You can see the shadow up there now. I . . . I was just watching it when you came in."

Quickly he went to the screen and focused according to her direction. There was the shadow. Like a grim echo from a land of fantasy, the land beyond the Artificial Sky.

Pete stared at it, then lowered his head and beat it sharply with the palm of his hand. "What a double-headed fool I am! I should have known there'd be more than one single layer of the time-jammed space. There are probably at least three, with the center one traveling opposite to the other two."

Marla stood frozen by the corner of the panel. "Then . . . there is no hope?"

He turned slowly toward her, and the deliberateness of his motion was a terrible thing to see. Almost hypnotized, she watched him

rise—and cowered before him. Then she read his eyes.

Her own opened wide. "You heard—"

"Yes, I heard. I heard you talking *through* the Artificial Sky. No beam we know of can penetrate it. How did you do it? Whom were you talking to?"

He reached for her, but she ducked under his arm. Her foot swung out and smashed into the entrails of the transmitter—the secret added circuits that only she had known.

"You devil!" Pete swore hoarsely. His fist caught her on the point of the jaw.

He stood over her where she slumped. The bitterness drained out of him and he stooped tenderly and picked her up.

"Marla . . . Marla—"

He couldn't comprehend the horror of the thing that had happened. She had lived on Radiation Asteroid over five years, had known and loved its people—Jed and Mamma Murphy, Arnold, Doc Johnson—

He called Jenny Harold of the nurses staff and turned Marla over to her. "See that she has everything she needs, but she is to be held under guard until further word from me."

Pete sank down before the integrator, pursued by a total weariness of body and mind that told him that whatever he did would be of no use.

Absently, his fingers touched the keys and he set up the equations for the Kittredge Distortion. It was like a familiar Wagnerian composition and he knew it by memory.

When the factors were set up in the mechanism, he turned from his melancholy contemplation and all the intensity of his probing intellect shifted to the analyzation of the problem of a normal and a reverse time jam and any possible combination of these.

The hellish sun went down and the white knives of wind-driven snow gashed at the windows of the laboratory. Pete worked until midnight. When he was through, he had created a rough sketch of a little four-inch-square switch. Attached to the synchronizer, this would reset the mechanism instantly and make it active upon any secondary time jam, regardless of intensity or direction.

Pete sent a rough drawing and specifications into the shop.

When this was done, he sat alone, staring out the window into the awesome night. Constantly, in the vortex of ice needles, he seemed to see the face of Marla. He wanted to go to her, ask her why she had done this thing, tell her what she meant to him.

But it would accomplish nothing, he told himself. There would be time enough for retributions and the healing of old wounds when he came back from his trip through the Artificial Sky—if he came back. Perhaps in another few hours he would be locked for eternity beside Bill. Perhaps in some future day, if mankind did not succeed in wiping itself out with this terrible weapon, a greater intellect than his would find a way to pierce the Sky and discover the floating corpses that had spent eternity in the grip of timelessness.

It was morbid. He threw the thought from him and turned back to the instrument panels in the room. On the switchboard he set up a circuit and shot a probing beam into the Sky, toward Bill's ship. He had in mind to determine, if possible, the alteration of time flow about the obstacle.

The beam, when shifted from right to left, indicated a strange ripplelike distortion in the time jam. Bill's ship acted like a point source of emission, but there was interference present in the pattern as if the secondary wave were beating with another wave traveling outward from the Asteroid.

Pete stared at the instruments uncomprehendingly, checking them and rechecking them for possible significance.

When it came, it was like a flash of atomic fire.

He was at the point source for the polarized delta components of the cosmic rays required by the Kittredge equations.

He checked again. The figures showed a point of origin less than one hundred feet below him.

White-faced, he grabbed an indicator and raced from the room. By elevator, he dropped the hundred feet in seconds and came up against a thick, fireproof door.

He was almost certain of his destination. The room was an old storeroom, a glorified junk box, containing uncounted numbers of pieces of equipment, generators, and tools of all kinds. Special equipment and apparatus of failed and abandoned experiments were stored in there, and no one entered the place except to throw some piece of junked equipment "where it might come in handy sometime."

He found the light switch inside the door and walked down the aisles with the indicator, peering between the stacked shelves and bins.

Any sort of electromagnetic disturbance would register on the indicator.

Even so, it took thirty minutes to locate the generator so well was it hidden beneath a pile of boxes of tubes and transformers.

A long, heavy cable snaked out from the pile to the nearest power outlet. This had been revised and heavy-capacity conduits installed.

The generator did not surprise Pete. Its form was familiar, a heavy metal base covered with unknown pieces of apparatus. What surprised him was that such a tiny machine had power to inclose the entire Asteroid in a time jam.

A feeling of omniscient power for destruction filled him as he raised a heavy transformer above his head with both hands. One blow and the Asteroid would again be free and open to the natural sun and the clear stars. Its "family" would be released from the prison. Pete's arms started a downward arc—

His fingers released the mass of iron and wire—then desperately his arms slashed out to retrieve the transformer before it hit the generator.

It missed by a fraction of an inch, and cold sweat beaded on Pete's forehead.

He had forgotten Bill.

Should the generator be destroyed, Bill would be flung backward or forward in time endless millennia, according to whatever instant of time he occupied at the moment of destruction. There had to be an attempt to save Bill before the generator was destroyed.

Pete knew what he had to do: go through the time jam and drag Bill out with him. But that was an impossibility. If he ever got lodged in there, he would never be able to determine which way to swing the ship when the door of the present time swung open before them. Nor could he—

There was only one angle—destroy the time jam at the instant that Bill was at one of the infinity of presents.

It was night and the blizzards were raging below. The temperature had gone down to eighty below in its daily widening swing from the maximum of two hundred and eight degrees.

Pete looked down upon the ghostly, frozen Asteroid. A nostalgic wave swept over him. Radiation Asteroid—that he had helped build with his own hands—represented everything that was desirable to the heart of man. Its laboratories and farms were home and the five hundred who lived and worked there were family to him.

If he failed this night's work, he and Bill would never glimpse their miniature world again. But regardless of his success the others would never know another night such as this one.

Doc Johnson was the only one that knew Pete was on his way, and Doc had his instructions. If Pete did not return or communicate within an hour, the time-jam mechanism was to be destroyed.

Once, when he was a boy, Pete had broken through an ice sheet while skating on a lake and floated away from the hole and under the ice. That moment of frozen loneliness was repeated as he looked up at the dull night-grayness of the sheet above him.

He felt reasonably sure he would get through it.

His enemies cursed his arrogance and his friends praised his sureness, but he knew that he deserved neither. He had determined the percentage of error in his thinking processes and used them well within the limits of that error.

He knew, too, that if he ever got through he was going to have vengeance for the death and hardship that had come to Radiation Asteroid.

He fingered the pair of guns that lay on the control panel as the ship neared its ceiling.

Abruptly, a warning sounded and he knew he was at the critical level. He flung a lever and turned full control over to the synchronizer which would hurl him through the triple-layered time jam, or lock him eternally in some unknown vista of time.

He waited a breathless moment of hesitation, then there was a sudden strain as if each of the infinity of points in his body had been caught in a sliding door. Then a whine rose from the straining atomics as every foot-pound of energy available flooded into the converters.

He thought for an infinitesimal instant that he detected a double twist and jarring as the ship was torn through the oppositely turning layers of time. But he was never quite sure, for it all happened too fast.

The next real impression was of blessed starlit space, cold and clear—and the immense burnished surface rapidly receding behind him.

Now—where were those whom Marla had instructed to wait for him if he got through? Where were those to whom she had talked through the time jam? He touched a hand to

the pair of guns, and felt his breath come uncontrollably hot and fast.

But there was Bill yet. Pete knew that the time jam was traversible now. It remained to effect Bill's release. He searched on the screen until he found the first life craft again, reposing ghostlike in the depths of the time jam. He sent the auxiliary unit at high velocity boring into the reverse side of the Artificial Sky until it rested beside Bill's ship.

He made a slight adjustment to the synchonizer, then set an additional switch attached to the communicator and waited.

The result was instantaneous. The Artificial Sky vanished like a pricked balloon. The hellish sphere of the artificial sun, the controlled-reaction nucleus, slid into the dimension of nonexistence. The terrific heat and cold on opposite sides of the Asteroid began flowing toward equilibrium.

And Bill's ship darted with comet speed out toward the depths of space.

Pete didn't wait to see what happened to Bill. He knew the assistant would return, probably unaware of having been locked in a time jam.

Several other things happened in the same instant. Six great warships of Earth, previously hidden by the curvature of the Artificial Sky, were now hurtling toward the surface of the frozen, desolated Asteroid.

But one ship was not diving.

Pete knew that ship, the monstrous war leviathan, flagship of the atavists of Astronaval.

Boris Hardin would be aboard that ship.

Pete hung quietly in the void, waiting contact. As the vast war vessel closed in upon him, he slipped the twin guns in his side pockets. Then the metallic clang of a boarding tube jarred his ears.

There was a moment while the magnetic coupling was made firm, then the opening of the warship's port—the hissing of air into the tube—and the cracking of the emergency exit port on the life craft.

A uniformed sailor thrust cautiously into the room. "Hello . . . anybody—"

He spied Pete standing immobile by the con-

trols. "You're all right!"

"Yes—I'm all quite all right. But Mamma Murphy isn't."

"What—"

"Never mind. You wouldn't know about her. Take me aboard."

"That was our orders. The commander will see you if you are available."

"He knew damned well I was available—or there wouldn't have been any ship coming through."

The sailor stood aside and now Pete saw an honor guard of a dozen more sailors standing in the tube and back in the warship.

"After you, please," said the sailor.

Pete moved slowly toward the tube. As his foot crossed the threshold a swift motion across the transine port caught his eye. He uttered a low gasp. It was an Egg, soaring through space toward them.

Pete sucked in his breath sharply. There was only one person in the universe fool enough to take an Egg into space.

An Egg was never built to leave the surface. Its power was insufficient to enable a return, and its shell was too fragile to stand the terrific internal pressure.

"Get going!" Pete snapped. "What are you standing around for?"

The sailors stiffened, their military form outraged, but gave way before his charging gait down the tube.

He knew where he was going. He had been forced many times to study the ship minutely in order to make some complicated change in design until he felt now that he could draw a plan of the ship in his sleep.

Deep in the interior, almost at the ship's center of gravity, he came to the great lead-and-bronze doors of the space-war laboratory.

He paused while the guard identified him. Then he stepped into the gray metal room.

Boris Hardin was sitting behind the desk, arms outspread amid neatly piled papers. He looked up and his head seemed to rise higher than usual as he surveyed Pete without expression.

But Pete saw it at once—the tremendous change that had come into Hardin's face. No longer was there the beaten look of resigned fear. There was pride and calm assurance.

"I am glad to see that you are well," said Hardin flatly. "I sincerely hope all the others are no worse than you."

"They aren't—the ones that are alive."

"I'm sorry—terribly sorry for those who died—and for you."

Pete's entire body was tight like a muscle carrying a high-voltage current. Then he loosed. He leaped from the doorway to the side of the room. Simultaneously, both hands dipped into his pockets. His right hand held a menacing gun stiffly. His left flung the other weapon to the desk in front of Hardin.

"All the sorrow your twisted heart can hold will not pay for the lives that ended down there because of your insanity. Defend yourself!"

Hardin made no move. Only his lips twitched sorrowfully.

Out of the corner of his eye, Pete watched the sailors at the door. Then Hardin's hand moved slowly toward the gun. Pete stiffened and concentrated his gaze on the militarist.

That was the signal. The foremost guard plunged in a line tackle for Pete's knees. The next one tore his arm back and spun the gun across the room. Boris Hardin rose slowly and recovered it.

"Thanks, men. You may leave us now. You see, Pete, that is these men's business—personal combat. They excel in it to the same degree that you do in figure work and physical principles. It was a very poor estimate of your opposition to think you could pull something like that in here, but I knew you would do it."

Pete's eyes lowered and he cursed himself in self-condemnation. He knew that every word Hardin spoke was true.

"I suppose you know what I could do to you for this attempt?" Hardin said when the guards had gone.

"I know what you *could* do—and that you aren't going to do it, because you want the secret of my synchronizer and point-source location system too badly. I'd just as soon let it die with me as give it to you."

Hardin's answer was interrupted by the hurried entrance of an orderly. He spoke something audible only to Hardin.

The latter nodded in assent. "Some friends of yours," he said to Pete. "Quite a party we'll have here soon."

The orderly departed and returned in a moment. Into the room he ushered Bill Ames and Marla Ipson—Marla who had dared space in an Egg to escape from Radiation Asteroid.

She flashed a friendly smile, but Pete reflected it away with an icy mask. Only Bill was voluble.

"Pete! How did you get here? Last I knew you were asleep, and when I come busting

through the Artificial Sky, the whole squad of sailors are waiting to pick me up. And then I bump into Marla on the way here. What is this, anyway? How did you two get here?"

Boris Hardin held up a hand. "That can wait, Bill. Pete, here, was just on the point of delivering himself of an oration, I think. It would probably be interesting to hear. Do you care to go ahead, Pete?"

"You're damned right I do. I don't care what kind of stupid military procedure you take against me. I'm going to tell you now what I think of your guts. They're made of steel and ice. Your only standard of existence is a vast, dreamlike military necessity and all other values are to be sacrificed to it. Where other men talk of peace you talk of war. It's not merely a profession; it's an atavistic tendency found in the few of your kind that are left in Astronaval.

"As other men dream of utopia, you dream of the perfect weapon that will win all wars, kill all enemies, make you masters of the universe. And just as men have almost arrived at utopia, you have found your perfect weapon in the depths of your hellish brains.

"But there was just one defect in it. You had no defense against it. You could not go through the Artificial Sky. And you couldn't find a way through, yourselves. So you thought you could force the brains of the researchers on Radiation Asteroid to do the job for you. You knew we'd never do it cheerfully and willingly and we'd never do it at all if we could dawdle along and keep putting you off.

"So you invented a war that never existed, and turned your weapon on *us*—"

"Wait a minute!" Bill's voice burst out. "What are you talking about? Inventing a war—"

"Ask the military man here about the war."

Boris Hardin nodded slowly and solemnly. "Pete's right. There is no war."

Bill stood staring, utterly uncomprehending. "I don't get it. You turned the Artificial Sky on us yourself. Mamma Murphy, Jed—the others. You dirty murderer—"

"Tell him when there will be a war," said Pete.

"There will be no war at all," said Hardin. "The military factors between Earth and Venus have reached critical equilibrium once more, due to your discovery of a defense against the Artificial Sky. Until that balance is overthrown again, there will be peace."

"You are forgetting one thing," said Pete. "While your sailors and technicians may be even now dismantling the synchronizer in my life craft and tearing our laboratory on the Asteroid apart, the secret of the defense against the Artificial Sky is locked in my brain. It can't be found in the equipment we built. You shall never have it!"

Marla spoke now for the first time since she had entered. Her voice was soft and filled with a deep sense of pain.

"Why don't you listen for a moment to the other side of the story?"

"Sure, we'll listen. If Hardin's got anything to say, it ought to be good. I'd like to know why a man has tried to murder me," said Bill.

"You can't say I didn't give you fair warning, Pete," said Hardin. "I told you the story of how my father gave me my first swimming lesson. That should have been clue enough for you.

"No amount of bribes, threats, or promises would force a successful defense against the Sky out of you—in any reasonable time limit. You have admitted that, yourself. You say I shall not have it even now.

"I understand the reasons behind your actions. While some omnipotent, misguided providence has blessed you with the best brains on Earth in the field of theoretical physics, you have been left total blanks with regard to any conception of the economic or political factors which exist between the peoples of the universe. You blind yourselves to the actual existence of an explosive war potential between the Korphs and Earth.

"The Korphs *did* invent the Artificial Sky and we *did* lose eighteen agents in the theft of the working model which I gave you. We were faced with the actuality of attack and the inclosure of the entire Earth within an Artificial Sky on a date not six months from now. We had to have a defense against it. You were the only single brain capable of delivering it, Pete, that we know of. But the scientific utopian in you refused to allow that brain to act for us. We had to force you to do it, to save the Earth."

"How noble of me! But your melodramatics aren't very convincing."

"Then maybe this will be!" Marla tossed a little metal can on Hardin's desk.

All of the men recognized it as a container for an Inscription Disk.

Hardin gasped. "Is it—"

"Underhill's agreement."

"You found it!" Hardin cried. "I knew that fool would carry one. He never trusted any of his superiors."

"I thought Pete and Bill might like to see it. The half-breed had it hidden under his skin on his back. I found it after his body was burned in the fire in the hangar."

Hardin turned to Pete in triumph. "Just how have you explained the actions of Sam Underhill, the half-breed, to yourself? I should think you'd find that hard to do, taking the position you do."

"It's simple. Probably hypnosis. You had him act the part of a Korph plotter so that he could destroy the *Eros* and the fake model of the time-jam generator so that I wouldn't detect that Marla smuggled a real one in and set it in operation."

"You think, then, that we deliberately murdered an innocent man in order to carry out our plans?"

"Men," corrected Pete, "and don't forget Mamma Murphy."

Silently, Boris Hardin opened the can and inserted the three-inch square into a playback on his desk.

Instantly, the room was filled with the presence of three ominous figures. Pete instinctively crouched before them, for their presence was the very essence of evil.

With their presence Pete's entire world tottered and crashed. The infinite evil the figures brought was the result of the infallible identification aura which the disk carried.

The figures began speaking. It was Krulgen, Full Regent of the Korphs. The room was a secret council chamber on Venus. He addressed Sam Underhill and the other figure—and Pete suddenly uttered a cry of confused emotion—despair, wonder, frustration.

The third figure was Marla.

Impassively, now, the real Marla watched the panorama in which her unreal self was an unholy player.

"You have come to the fulfillment of your destiny," the Full Regent stated in the short, monosyllabic Korph tongue. He was talking directly to Sam Underhill. "You shall perform the work for which your father destined you even before you were born. You know the date on which we strike at Earth. It is absolutely essential that the outpost, Radiation Asteroid, be destroyed at the beginning of the attack. You, personally, will see that it is done —but we do not trust you. You are only half Korph. We cannot tell when you might become Earthman rather than Korph. So we appoint to watch and assist you Murla Eepsone, full-blooded third-generation Terra-Korph. Your covenant!"

The Full Regent drew out a small tube from a drawer and pressed it momentarily to the left shoulder of Underhill and the girl. The scene vanished.

"We tricked Underhill into believing the attack had started. It was his part to destroy the fake model of the generator—but it was not intended that he should kill Arnold. We regret that accident. But if you are still not convinced—" Boris Hardin beckoned to Marla.

She stepped forward and the militarist pressed a small circular key to her shoulder. It changed to a blinding white glow.

"The mark of the secret council of the Korphs. Now do you believe?"

Pete could only nod. The misery of his shattered illusions would die later, but the wound was too raw now.

"There will always be war," said Marla softly, "as long as there are men with chaotic, unharnessed minds and sick souls. But this day will not last forever, and when the dream of peace and Utopia does come it will be through the men of science and not the men of war and politics. You are sure of your triumph in the end, though it may be long in coming."

Pete looked at her long, absorbing her words and the depth of her thought. "I hope you are right. I *would* like to know exactly where you fit in all this mess," he said at last.

Boris Hardin grinned. "Haven't you guessed? She's number one man in our Intelligence Division. Our ace agent. We put her on Radiation Asteroid five years ago against the day when we'd have to use your brains against your will. For five years she studied you and when the time came it was her plan we used against you. Third generation Terra-Korph or not, she's true Terrestrial. We couldn't have picked a better one for the job on the Asteroid, could we?"

Marla flashed Pete a warm smile, a plea of forgiveness and an invitation to start back where they were before Boris Hardin's drastic swimming lesson.

Slowly, Pete answered in the affirmative with a smile of his own. "You're right there."

THE END.

OPEN SECRET

By Lewis Padgett

NOTHING *secret at all. Walk in their office any time. Only—somehow the word couldn't be spread, the world couldn't understand—*

Illustrated by Fax

Mike Jerrold was the only passenger in the elevator when the operator passed out. He saw the man gasp, double up in pain, and stab out blindly at the stop button. Pressure against his soles decreased. Jerrold jumped forward and tried to catch the falling man, but didn't quite make it.

The lips looked cyanosed; that meant heart attack. Jerrold's degree was for psychiatry, not medicine, so he was at a loss. Scattered bits of half-forgotten first aid whirled into his mind and out again like a kaleidoscope. He stared around, realizing abruptly the shortcoming of an elevator aside from its functional use. Not that it was a bad elevator, *per se*. It was quite modern, in one of New York's best skyscrapers, and, once you were inside and the door closed, you had no way of knowing, till it opened again, whether you were ten, twenty, or thirty stories above ground level. A grab-bag sort of arrangement, though without the element of chance. The random factor could not enter into the question—as long as the operator controlled the elevator.

He'd passed out now. Jerrold grimaced, touched a button by guesswork, and felt the cage begin to rise again. The fifteenth floor, it was. In a moment the door slid noiselessly open as the car settled pneumatically into position. Jerrold looked at a plainly furnished office with a receptionist's window in the farther wall. There was a door near it, a brown carpet on the floor, but no chairs. Nor was the receptionist visible.

Jerrold started out and then, struck by a new thought, paused to drag the operator with him. He vaguely mistrusted elevators. Sometimes they started by themselves. He went to the window and said, "Hey." Nobody answered. There was no switchboard; just a comfortable chair, a desk, and a pile of magazines. Jerrold turned to the door and opened it. It swung inward, away from him. He was facing a robot.

The robot, roughly man-shaped, was sliding—he had wheels instead of feet—back and forth on the other side of a table covered with a relief map of a section of Manhattan Island, from about Fiftieth Street to the Village, and

bounded by the rivers. Twinkling dots of light glimmered like fireflies all over the map. The robot had four arms, each extended into innumerable wiry cilia. He, or it, would touch one of these wires to each light that flashed, keeping that position for a variable period, sometimes a split second, sometimes much longer. The robot had no face, but a grid of shimmering wires. It was certainly alive, certainly intelligent; and Jerrold's dark, ugly face went gray. Through an open door he could see another robot working presumably at a similar task.

He backed up, slowly and noiselessly. The robot ignored him. He closed the door. Instantly he had a feeling of illusion.

The receptionist's window was still vacant. Jerrold pulled the operator back into the elevator and thumbed the main-floor button. The car dropped sickeningly. Jerrold felt an uneasiness in his stomach. He forced himself to think only about the man at his feet.

When the panel slid open, Jerrold shouted at the starter and relinquished his charge to more capable hands. After that, he went into another elevator and this time completed his trip to the twenty-first floor, where Dr. Rob Vaneman had his offices. The girl said to go right in.

Vaneman was a big man, red-faced, bluff, gray-haired, and overwhelming. He boomed jovially at Jerrold, shook hands, and dragged out a bottle. "No," he said, putting it back. "Not yet. Let's get the business over with first, eh, Mike? Strip down and let me check that blood pressure of yours."

Jerrold obeyed. "I just got in town yesterday. Research for the U. Be here a month or so, I guess. How's tricks?"

"Fair enough. They keep me busy. I moved lately, you know."

"No, I— How's the blood pressure?"

"Up a bit. Let's try your heart." Vaneman listened and glanced at Jerrold sharply. "Been dodging taxicabs?"

"I've been— I ran into something funny. Tell you later. Let's get this done first."

Silently Vaneman completed the examination. "You're sound. You didn't need to come to New York for a check-up, Mike."

"I didn't. Research, I told you. But while I'm here—you know my metabolism and my allergies." Jerrold adjusted his tie. "Who's got the fifteenth floor in this building?"

"I dunno." Vaneman relaxed with a grunt, poured drinks, and lit a cigar. "We're not exactly next-door neighbors. Look on the board downstairs, or ask the starter. Why?"

"I got off there just now. What I saw—" Jerrold explained. "Don't tell me I made a mistake. I know the difference between a robot and a . . . a gadget."

The physician grinned. "Do you? It takes a robot to fire the big navy guns—or what amounts to one. You sound medieval. Trot off to the Westinghouse labs and you'll realize that science has come a long way in a few years. My diagnosis is spinach."

Jerrold said stubbornly, "Those weren't machines. They were robots. Their coordination wasn't mechanical. One look convinced me."

"Then you'd better take another look." The Dictograph buzzed. Vaneman listened, spoke briefly, and sighed. "One more patient, and I'll be through for today. Want to meet me in the bar downstairs?"

"Right." Jerrold got up. "See you later, Rob. We've a lot to talk about."

"Six months' worth of accumulated trivia. Including robots. Saluda."

Jerrold went out and took the elevator downstairs to the bar. He had a drink. Then he searched for the address board and looked in vain for any firm listed on the fifteenth floor. The starter supplied a little more information.

"That's occupied by William Scott & Co., Research Engineers."

"Thanks," Jerrold said, and found a telephone book. William Scott & Co. wasn't listed. He fortified himself with another sidecar and took the elevator to the fifteenth floor, unable to suppress a mad feeling that the entire story might have softly and suddenly vanished away. "Like a Boojum," he murmured, evading the glance of the operator. "Uh . . . fifteen, please."

But the Snark wasn't a Boojum. The reception office was unchanged, and this time a girl was sitting beyond the window, a pretty redhead with pleasant green eyes and a smart-looking dress. The green eyes opened slightly, Jerrold noticed. Was the presence of a visitor that surprising?

"Good morning," she said. "Can I help you?" Her voice was low-pitched and unaffected.

Jerrold heard the elevator door slip shut behind him. He walked forward and leaned

his elbows on the window ledge. "Maybe," he said. And stopped.

What the hell could he ask?

"Do you have robots here?" he said at last.

"Yes," the girl told him.

So that was that. Jerrold looked at her blankly. "Intelligent robots?"

"What would you like?" she inquired, quite pleasantly.

Jerrold felt snubbed. He glanced at the cryptically closed door. Beyond it—

He was definitely afraid of what lay beyond it. They might be listening even now.

"I'd like to have a drink with you," he said, "if you don't mind. My name's Mike Jerrold. I'm a psychiatrist. I can give you references." He grinned. "May I offer drinks, dinner, or both?"

He expected her to refuse, but she didn't. The green eyes showed humor.

"Thanks, Mr. Jerrold. But I work here—till five thirty."

"May I come back—at five thirty?"

"Uh-huh. I'm Betty Andrews. Good-by." She turned back to her magazine. Jerrold nibbled his lower lip and retreated, ringing for the elevator. The office was quite silent. The robots seemed to be noiseless.

The dreamlike quality of the situation impressed him violently as he rode the car down. Seeing the robots was shocking enough. But the girl's casual admission that they existed was subtly horrible. It was like a woolly dog story, like the yarn about the man who, discovering a talking horse, mentioned the matter to its owner, and was told, "Oh, my horse tells that story to everybody who'll listen." As a gag it was funny. In real life it was not at all amusing.

Dr. Vaneman was waiting in the bar. He leered at Jerrold over the rim of his glass. "Find your robots?" he inquired ironically.

"Yeah. The receptionist up there admitted it. Well?"

"She has a sense of humor. I hope you're not serious, Mike. Do I have to waste half an hour talking logic to you? I prefer illogic. It's more restful."

"Talk all you want," Jerrold growled, waving to the waiter. "I just happen to be firmly convinced that you've got robots on the fifteenth floor of this building, right here in New York."

"Better than termites, anyway," Vaneman said into his highball. "What harm can robots do? They're useful little folk, from all I hear."

"Could be. Nobody's ever made a real robot—one with a thinking brain. Unless—" Jerrold frowned. "I wish I knew who's running those robots and why. The human colloid brain's physically limited, Rob. It's incapable of pure, disciplined thought, because it *is* in a human body. A robot could lay out a thought matrix and carry it through to a conclusion you or I couldn't hope to approach."

"So they could square a circle. Let 'em. First, I don't believe there are robots upstairs. Second, if there were, what of it? Third, I want another drink."

"Your damned complacence," Jerrold said. "You're molded by your environment so perfectly you've come to believe implicitly in that environment. You'll admit the existence of the impossible, but you'll rationalize it till it seems possible. If the Empire State disappeared overnight, you'd say it was a quick job of moving."

"The Empire State couldn't disappear overnight."

"True enough. That'd be much too obvious. If supermen existed now, they wouldn't do anything as overt as making a building vanish. Why should they tip their hands?"

"Mike," Vaneman said with slow emphasis, "tell me this: How could a lot of robots live on the fifteenth floor without anyone knowing about it?"

"Who'd know about it?"

"There are thousands of people riding those elevators daily—"

"Yeah," Jerrold said. "They ride 'em. Up and down. But not to the fifteenth floor. Do you realize, Rob, that once you're in one of the elevators, you can't look out till you reach the floor you want? Plenty of people go right past the fifteenth floor—past! See? It's a perfect camouflage."

"Some people get off there."

"There's that reception clerk. She takes care of solicitors. Come to think of it, peddlers and agents aren't allowed in this building."

"Cleaning women are."

"Right. Maybe they don't get past the outer office. I'm going to see the girl tonight, the receptionist."

Vaneman leered significantly. "I get it."

But Jerrold didn't trouble to reply. He drank his sidecar, a queer, troubled worry moving at the back of his brain.

He arrived an hour early for his appointment, and spent the time standing in the foyer, watching the elevator indicator dials. The ring of lights glowed in quick progression as the cars rose and fell. A panel would slide open; people would enter the car; the door would shut. Jerrold's eyes would lift to the dial. One. Two. Three. It paused at three. Then four. Five. A pause at seven. Eight. Nine—fourteen, fifteen, sixteen. Stop at sixteen. Stop at fourteen. Stop at any floor but the fifteenth.

Nobody, in that hour, got on or off at the fifteenth floor.

Jerrold kept a record in his notebook, intending later to check the variables against the names of the firms on the various floors. Then he realized that that didn't matter. It was only the fact that no elevator stopped at the fifteenth that mattered.

He told the starter vaguely that he was making a survey, but the man kept watching him from time to time. Jerrold was relieved at five thirty when he saw the indicator button, for the first time, light up at fifteen. As he expected, Betty Andrews got out of the elevator. Jerrold put his notebook away.

"Hello," she said at sight of him. "Been waiting long?"

"Not long. How about that drink?"

"Swell." She led the way into the cocktail bar. "Old-fashion for me."

Later, he looked at her across the dimness, wondering what lay behind the maskless mask of her face.

She set down her glass, ran the tip of a pointed tongue across her lips, and said, "Well, Mr. Mike Jerrold?"

"Well?"

"Question. Are you trying to make me?"

He said, "No," with a frankness that was disarmingly inoffensive.

"That's good. You see, Mr. Mike Jerrold, I'm hoping I'll get a taxi ride home. I live in Brooklyn. If you've ever been on the Brighton Express at the rush hour—"

"Taxi it is. Drinks, dinner, and a ride home. Does that suit?"

"Uh-huh."

It was a cool, dim hideaway place, Jerrold reflected, sipping his sidecar and feeling the tingling warmth move slowly through his body. Seldom was it possible to get out of the world. At times these moments came. Outside was New York; here was nothing but the moment. There was—as yet, anyway—nothing sexual about the situation, nothing to stimulate Jerrold; rather it was the delicious feeling of being able to *stop*, to rest on his oars and drift. The girl's presence was subtly effective; she, too, had stopped. For the moment, the driving force that makes up life had ceased. They relaxed in the twilight.

Then Jerrold began to talk. He tried to do it casually, but he sensed that Betty wasn't deceived. She wasn't loath to answer his disguised questions, either. As a practicing psychiatrist, Jerrold had learned tact and diplomacy, but the sidewise approach was not necessary now.

How long had she been in New York? Oh, about five years. She'd been lucky to land a good job almost immediately. Yes, with William Scott & Co., on the fifteenth floor.

"He's an engineer, isn't he?"

"He doesn't exist. How did you know there were robots up there?"

"I . . . I walked in. You weren't there."

"Oh."

"They didn't notice me."

"They will," Betty chuckled. "They have more senses than we have, but not quite the same ones. They don't know what happens in the same room with them; they don't care. It's what happens outside the fifteenth floor that they know all about."

Jerrold said slowly, "I'm interested, naturally. If you don't think I'm prying into secrets—"

"It's not that sort of secret. They don't care how many people find out, because not many *can* find out."

"That door wasn't even locked. I walked right in. Betty, do you realize what we're talking about? Are you handing me a line?"

She shook her head, green eyes serious. "No, I'm not, not at all. There's no reason why I shouldn't tell you all about it, if you want to know. They don't care."

"The robots? Why don't they?"

"You won't do anything about it."

"I might tell someone else."

"He wouldn't do anything about it."

"He might tell the chief of police."

"The chief wouldn't do anything about it. It's like a stone thrown into a pond. I've seen it happen before. The ripples go out—and then they stop. The robots have all the power in the world, Mr. Mike Jerrold."

Unthinking impulse made the man look up. "Eh?"

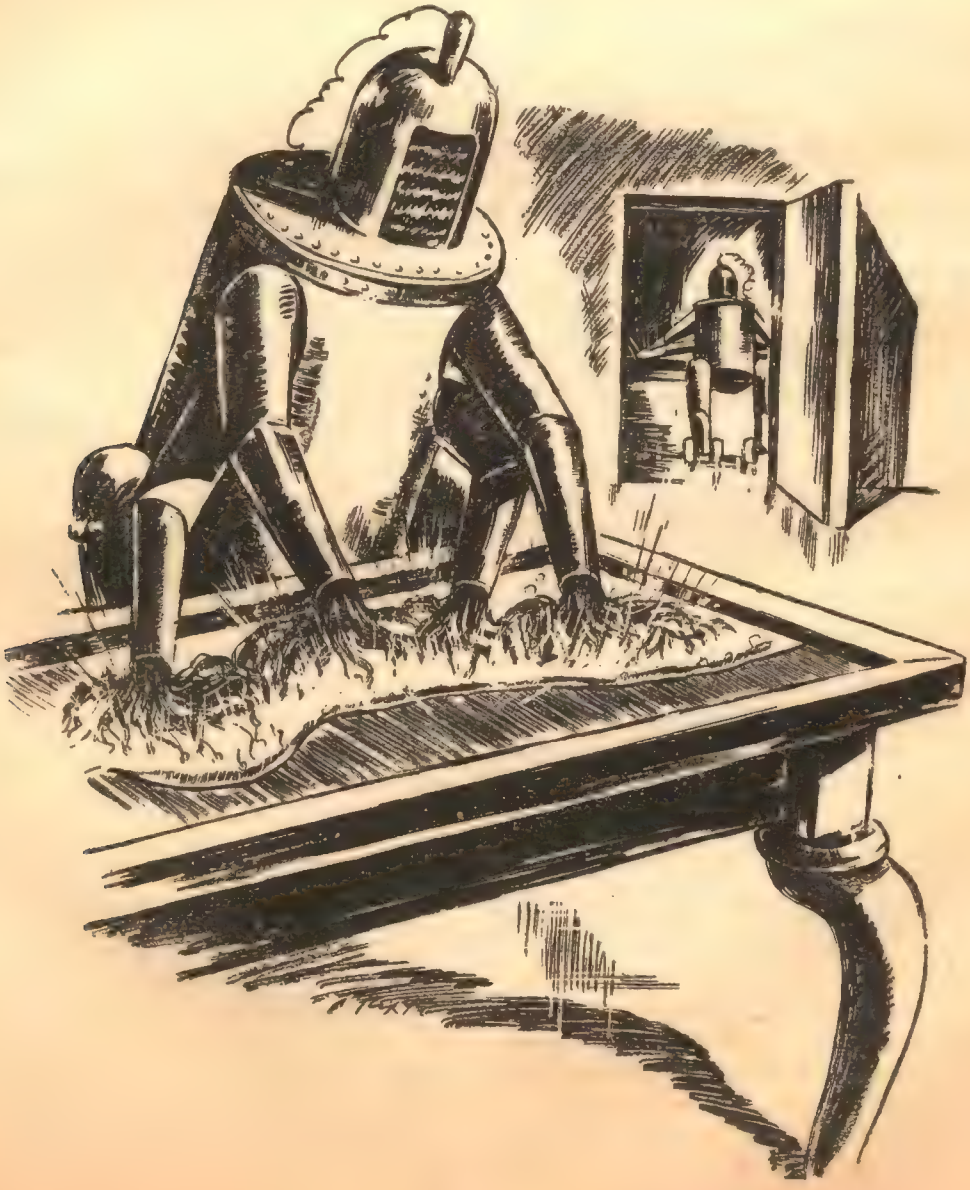
"They run things. They make people do what *they* want. They've done it to me, too. When I found out first about them, I was scared. They processed me. It's painless—" She smiled a little. "You don't even realize it's happening. You think you've made your own decision. Your relative values simply shift. I was going to quit. I was processed. I realized that it was a good job, paying well, that I wouldn't be harmed, and that nothing I could do would alter things. So here I am."

"What are they?" Jerrold said in a tight voice. "I won't believe you—" He paused. "No. I saw them. They were intelligent, weren't they?"

"Sure. And they've been around for quite a while. History's full of attempts to make robots. The Golem, the homunculi— I had a good liberal education. For ages people have tried to make intelligent robots. Not too long ago someone succeeded. Or a number of technicians succeeded; I'm not sure. But the world never heard about it. Can you guess why?"

"Wait a minute." Jerrold rubbed his jaw. "You mean the perfect solvent?"

"Of course. Suppose you make the perfect solvent. What would happen? It would dissolve anything you put it in. You could make it, but you couldn't keep it. Intelligent robots are like that. If they're successful at all, it's because they have the right sort of brain—one that can think. And necessarily



it's also unlimited in its scope. It's far more intelligent than we are. Look"—Betty tapped the table—"let's say, Dr. Jones makes a robot. The robot can think faster than light, a lot faster. From its creation it's brainier than its creator. What would it do?"

"It wouldn't remain a laboratory subject."

"Course not. It didn't. It processed the scientist, so Dr. Jones thought he'd failed; it left another, useless robot in its place, and it went out and hid. It didn't like this world. It wanted something different. So it simply set out to change the world, through the tools at hand."

"Tools. People?"

"Uh-huh. I think there've been lots of successful robots made, and I've an idea that they've made others, to help them change the world. The office upstairs isn't the only one, you know. It only handles a section of New York. There are other robot offices, in Washington, Chicago, Boston, Los Angeles, in Europe and Asia, too. And Africa. Wherever there's a natural social control center, the robots have an office."

"That's plain crazy," Jerrold said. "How could a secret like that be kept?"

Betty's eyes were very serious. "Mr. Mike Jerrold, listen to me. The robots don't even try to keep their secret. They don't have to. You're not the first man to walk into the office and see them. There are plenty of people going around today who know there are robots on the fifteenth floor here. The same goes for Washington and Frisco—everywhere."

"That doesn't make sense. Why don't they talk?"

"They've been processed. When the robots get around to it, they do something to the guy's mind. It doesn't hurt. He never knows it's happened. He still realizes that there are intelligent robots, and pretty often he knows what they're doing. But that's locked in his mind. He can never tell anyone, never pass on what he knows."

Jerrold pounced on a flaw. "You're telling me about it."

She gestured wearily. "I tell you, they don't care. They just never bothered in my case. It doesn't matter who I talk to. Eventually that person will come under the robots' observation, and he'll be processed. The same goes for anybody he might talk to—anybody he might convince."

"It's no way to keep a secret. Damn it! It . . . it seems as if those devils are so self-confident that they don't even bother to . . . to—"

Betty finished her drink. "Another, please. Thanks. Why talk about it, Mike? It'll only upset you, until you're processed."

"They won't process me," Jerrold said grimly.

"Hm-m-m." Betty looked unconvinced. "I told you they can control minds at a distance."

"Telepathy? Impossible. Selectivity—"

"It's not telepathy. They use a mechanism. Look, suppose you wanted to check up on a lot of people. What would you do? No detectives."

"Dictaphones—eh?"

"Call it that. And suppose you wanted to give them orders, too. Just vocal orders—limit it to humanity, for the example."

"A two-way radio."

"And suppose you didn't want those people to know what you were doing. You'd hide the radio, wouldn't you?"

"Yeah."

"Where would you hide it?"

Jerrold started to answer, paused, and looked sharply at the girl. She nodded.

"The Purloined Letter. In plain sight, but disguised. And disguised so no one could possibly discover it was a radio."

"What?"

Betty smiled crookedly. "If you were clever enough, you could disguise it as a vacuum tube and put it in a radio. You'd sell it openly—as a vacuum tube. People would buy it for one purpose, but it'd really serve two."

"It's not a radio—"

"No, it's not. But it's something everybody uses, and uses often. Built into it is a device that seems to serve a perfectly natural mechanical purpose. It does serve that purpose. But it also keeps open a connection with the robots. It keeps them in mental touch with anyone who uses that particular device."

"What is it?"

"Telephone," Betty said. "Some time ago a certain improvement was made on phones, and almost all of them have it now. The robots saw to that. Humans make the . . . the gadget, of course, and they make it to fulfill one obvious mechanical purpose. They don't know that the structure of the gadget makes it also a tool for the robots. That's right, Mike. All over the world there are con-

trol offices, manned by robots. They listen in on telephone conversations—not the oral ones, but the mental. They read thoughts, through that little gadget in the phone, the gadget that really belongs there to make the phone work. They issue orders through it. They process minds. They make people do what they want. They manipulate stocks, swing business deals, start wars and stop them. They run the earth, Mr. Mike Jerrold. You know that now, and they don't care if you know, because you can't stop them."

Jerrold said, "What are they trying to do?"

"I don't know," Betty told him. "I couldn't understand. They don't think the way we do. They want the world different, but I don't know how. But they're getting it the way they want. It may be swell for humans, and then again it may not. It doesn't matter a hell of a lot, does it?"

Jerrold didn't say anything. Something within him rose up in furious revolt against the thought of irrevocable future, the negation of free will. It was like driving beasts into a trap. Some would break for freedom, some would balk, some would fight. But eventually the trappers would get what they wanted. It was the sum total that counted, and Jerrold knew that telepathic control, at the right points and places, would affect the whole of humanity.

He looked at Betty again. Her skin had a pearly pallor in the dimness, and her eyes were shadowy, strange. There was an incongruity about the scene.

Jerrold said, "Excuse me," and got up. He ordered another round of drinks on his way out. In the lobby, he entered an elevator and got off at the fifteenth floor.

The receptionist's window was closed now. But the door was still unlocked.

Jerrold went into the adjoining room. The robot was wheeling itself smoothly about the table, its wire-fingered hands manipulating the lights on the relief map of midtown Manhattan. Jerrold's stomach dropped, and a band of coldness circumscribed his middle. He stood there, waiting for the thing to notice him.

It ignored him completely.

It was man-size, but with a horrible functionalism man did not possess. It was alien. It went about its business, with sublime self-confidence, and its intelligence was obvious. The cilia touched the lights; sometimes they lingered, and Jerrold knew why. Processing—

He skirted the robot at last and went into the next room. It was identical with the first, though the robot was dissimilar. Its head was a gleaming ball, featureless, and it moved on three jointed legs. It worked on a relief map of the lower tip of Manhattan, from the Battery to Wall Street.

Wall Street—

There were many rooms; there were robots in all of them, each somewhat different, each working on a different sector of the five boroughs. Jerrold had a feeling that they never stopped; that they would stop only when they had achieved their goal. He had a brief, perverse hope that one of them would notice him. It was discomforting to be ignored, like a . . . gnat.

He went back to the first office and gingerly touched the map. Nothing happened. He gripped the tower of the Empire State and tried to snap it off; it was impossible. The plastic was unbreakable.

Jerrold, sweat beads on his face, took hold of the robot's arm. He tried to move that, too. He was dragged around in the creature's wake, quite unable to force the arm into the slightest deviation from its course.

They worked; they were invulnerable. That was the sum total of Jerrold's findings. Whether or not they would be invulnerable to a really powerful weapon, or to acid—

Betty was waiting when he got back to the bar. Jerrold sat down, and they drank in silence.

"It doesn't do any good, really," she said at last. "I know you can't help feeling as you do. But after you're processed, you'll be much happier about all this."

"I had to find out," he said. "Convince myself."

"And you're convinced."

"Yeah. Damn those things! They—"

"It was our own mistake, trying to build intelligent robots. Quite as silly as having a contest to see who can stay longest under water without breathing. The one who wins—drowns."

Jerrold held out his hand; it was trembling slightly. He made a grimace of worried uneasiness.

"The bottom's dropped out."

"You thought the ice was solid all the way down. That's why. But it doesn't matter, Mike. It doesn't matter, really."

"Those inhuman devils, forcing humanity

into a social pattern to suit their own needs—*No!*"

Betty moved her shoulders, settling herself like a cat. "We might have followed that pattern anyway, without the robots. You know that, don't you?"

"I've got to think this out." Jerrold tried to focus his mind; it was curiously difficult. As he had said, the bottom had dropped out. He'd discovered that he had an incurable disease, and the psychological result was the same.

In a way it was odd how convinced he was of the robots' invulnerability. Their self-confidence was sublime. They did not try to protect themselves. Protection was automatically a part of their plan to remold the world into—into what?

Jerrold didn't want to find out. He didn't much care. Humanity has developed on a belief in free will. Men know they can make their own ultimate decisions, and they feel that those decisions may be important. For want of a nail—

The part influences the whole. Otherwise, there was futility. It was not pleasant to feel that the part had no slightest influence upon the whole, that, inevitably, the herd would be driven into the predestined trap, that, no matter how the fish might flop and wriggle, the net was unalterably lifting and closing. A man might aim at a star—well and good. If his motives coincided with the aims of the robots, he'd be allowed to fulfill his plan. On the other hand— Jerrold met Betty's quiet gaze.

"'Nor all your tears wash out a word of it,'" she said. "It's no use, Mr. Mike Jerrold."

"The moving finger's anthropomorphic. We wouldn't object so much to that. Man made God in his own image. It's the reason men are willing to obey kings—they know that kings are flesh and blood like themselves, and want much the same things. There's the same common denominator. There isn't with those damned creatures upstairs."

"They're not made in our own image. If you'd only realize that in a little while you won't care—"

Jerrold set down his glass with a bang. He stood up, face strained, lips tight. "Let's get out of here," he said. "I don't like the feeling of being watched."

Betty went out with him, a rather quizzical smile on her lips. They hailed a taxi and found a restaurant. Jerrold didn't eat much. His mind went like a squirrel in a cage.

Afterward, they danced at a roof garden. Beneath them lay New York. Jerrold guided Betty to a terrace, and they stood alone, looking out into the dim city below.

"We're on top," he said at last. "Like humanity. But it's a long way down."

She drew the wrap closer about her shoulders. "We won't know it. It may not even be down."

"Guided. No, not even that. Led. Driven. Without realizing that we're not the masters." He searched for the faint lights of Brooklyn. "All over the world, people making plans, struggling and suffering and being crucified, because they think it's worth while. Fighting for what they think they want. And if they eventually get it, it'll only be because the robots want the same thing. We're blind in darkness. Blinder than the blind. If only—" His gaze went up to the empty sky, seeking an answer where there was none.

"What will happen? Man won't conquer the stars. That's one dream he'll never fulfill. But the robots will. They'll have no trouble in building spaceships. Maybe they can do that now, only they're not ready. And we thought the super-race would be a mutation of man!"

Betty didn't answer. When Jerrold turned to her, she lifted her face as though expecting his mouth to seek hers. There was no passion in the kiss; there was something deeper, a blind, desperate search for reassurance, a hunger that could never be sated. It was a man's hunger for the unattainable. And it was bitter.

He drew back suddenly. Betty's eyes glowed with a faint reflection of the lights beyond them. She was warm, human, attainable—and it did not matter.

"I'm . . . awfully credulous," Jerrold said unsteadily.

"You saw them. They make you believe. It's because they're what they are."

"I suppose so. That's why I feel it's hopeless to try to do anything."

"Quite hopeless."

"Just the same—"

There was silence. After a time Jerrold said, "Aren't there places in the world where their power doesn't reach?"

"The unimportant places. The ones that

don't matter. They control only the key spots; that's all that's necessary." She moved into his arms, her gaze holding his. "I'm very lonely, Mr. Mike Jerrold. I like you to hold me. Do you know what may happen to us?"

"What?" he asked softly.

"Marriage," she said, shrugging a little. "Or not. It doesn't matter. You'll be processed. That's inevitable. You won't be able to tell anyone about the robots. It would be nice to be with you as long as this lasts. I can afford to tell the truth, because I know there's no time to waste."

"I'm going to fight," Jerrold said. "The robots can't be invulnerable. Somehow, somewhere, there must be a way—"

"There is no way." She shivered. "Take me home, please. I'm not afraid. I can't be afraid; I was processed against it. It's just that— Take me home."

Jerrold did, and her face stayed with him during the long ride back to Manhattan. She had become a symbol, perhaps a symbol of humanity, resigned, going down to an unknown but predestined doom. In the background the inhuman silhouettes of the robots loomed. They were alien. There was not even a standard matrix for them. Their shape did not matter, as long as they were functionally designed to fulfill their tasks.

Jerrold did not sleep that night. It rained, the hot, sticky rain of the New York summer, and he walked the streets, his steps inevitably returning to the building where Betty worked. On the fifteenth floor, without lights—they needed none—the robots worked untiringly, directing the destinies of mankind. Through—something—in all the telephones of the five boroughs they listened to thoughts and molded those thoughts. And men believed that their decisions were their own!

In most cases they were. But not the important ones, not the judgments that helped to work out the robot plan. Sacrifice and gallantry were words. The net lifted and closed, and there was no possible escape. For man himself had woven that net.

The hot rain pelted against Jerrold's gaunt cheeks. His footsteps rang hollow, echoing softly through the canyonlike streets.

He went back to his apartment and yanked the telephone from its cord, dropping the instrument into a closet. Then he found his automatic, loaded it, and picked up a light traveling bag. The chance was worth taking.

He knew where to buy the strong corrosive acid he wanted, and, to make certain, he got several quarts. Then he waited till morning.

At eight he was entering the foyer of the building, just in time to catch a glimpse of Betty Andrews disappearing into the elevator. Suddenly Jerrold felt cold. He sprinted forward, shouting the girl's name, but he was too late; the panel slid shut.

The starter touched his arm. "Next car, please."

"Yeah . . . yeah."

Jerrold's eyes lifted to the indicator. The lights slid swiftly around the dial. Two. Three. Four— Fifteen. It stopped there, and then descended again.

Jerrold went into the next car. "Fifteen," he said.

He got off at fifteen. Betty was sitting behind the window, and there was no surprise in her eyes when she saw him.

"Hello, Mike," she said.

"Hello. I'm going in there." He looked toward the door.

"They won't hurt you."

"Do you think—" Jerrold's lips clamped

together. "Listen," he said. "I'd like to take you and go off somewhere, in the backwoods, maybe, where those devils can't reach us. Would you go with me?"

"It's no use." Her voice was calm with acceptance of an inevitable reality.

"Don't be a fool. They've got you hypnotized."

"They don't need to use hypnotism. No, Mike. They're not hard masters. They'd let us do anything we wanted, because we couldn't want anything that would harm them. If you want me, I'll be here. And if you want me, you'll come back. Only you won't feel the same way then. About the robots, I mean. You'll have been processed."

Jerrold made a hoarse, inarticulate sound and swung away, thrusting the door open. The robot was still there, gliding noiselessly around the relief map on the table, its fingers busy.

Jerrold took out his gun and emptied it at the robot. He aimed carefully. The wire grid that served for a face looked most vulnerable.

He'd expected bullets to fail, so he wasn't too disappointed. He set down the bag, opened it, and took out the acid.

It was strong acid. But it harmed neither the robot nor the relief map.

Jerrold went out, carefully closing the door behind him. He didn't look at Betty, though he could feel her eyes on him as he rang for the elevator, stepped into the car, and turned. He saw her then, a brief glimpse when the panel closed.

"Twenty-first," he said to the operator.

Vaneman wasn't in his office.

"If you'll wait, Mr. Jerrold—"

"Yeah. O. K." He didn't want to wait in the anteroom, with the girl stealing glances at his mussed hair, his untidy clothes. He walked into Vaneman's private office, and the receptionist, after a startled jerk, made no move to stop him.

Jerrold was halfway across the room when the telephone rang. He was not really conscious of lifting the receiver to his ear. He heard the receptionist's voice saying, "Dr. Vaneman is on the wire, Mr. Jerrold."

Jerrold said, "Yeah?"

" 'Lo, Mike," Vaneman's deep rumble came. "I'll be delayed about half an hour. The girl said you'd just come in. Wait for me, eh?"

"O. K."

Jerrold cradled the receiver. His face was gray, and an empty sickness was in his stomach. He stepped back, staring at the telephone.

The gadget—

The robots controlled telephones. A moment ago, they had been *en rapport* with his mind, listening, ready to issue their commands. It had been a mistake to pick up the receiver. Jerrold had done that automatically.

And he had not been processed.

His sense of relative values remained unaltered. His plans were the same. He still intended to convince Vaneman of the truth, to show the physician what was in the suite on the fifteenth floor, to induce Vaneman to use his influence with the authorities. He still planned to fight the robots by publicizing their activities.

He had not been processed. Which meant, obviously, that Betty had lied on one point. The rest had been truth. Only one vital factor was a lie.

The instrument the robots used was not a telephone.

Perhaps Betty thought it was. She had been processed. The robots controlled her mind. Naturally they would not let her reveal the secret of their power—the nature of their weapon.

It was not a telephone.

"It's something everybody uses, and uses often. Built into it is a device that seems to serve a perfectly natural mechanical purpose. It does serve that purpose. But it also keeps open a connection with the robots. It keeps them in mental touch with anyone who uses that particular device."

Betty had said that.

Something everybody uses—

Jerrold backed up against the desk and let his gaze swing slowly, probingly, around the room. He looked carefully at every object. In the end, he was no wiser.

Not a telephone. But what—

Jerrold's nails dug into his sweaty palms. He stared around again, feeling the net closing about him. Not a telephone. What, then—

He'd find out, of course. But he'd never know it.

THE END.

ESCAPE

By Joseph Gilbert and Fred W. Fischer

MR. ADAM *was—while his guardian had him safely locked up —a lucrative slave. He was a mutant, a bit more than human —and his inventions were worth money. But keeping Mr. Adam safely locked up required a bit more than human ingenuity.*

Illustrated by M. Isip

The voice dominated the twentieth level. Its pleasant, precise, rather too-perfect tones brought the strolling pedestrians to a stop, listening, with an interest that rippled across their pale, oddly spiritless features like a stone dropped in a millpond, lighting the dull impassivity of their eyes. The bright tunics and vivid kirtles on their small delicate forms splashed, as they stood there, like a rainbow against the brilliant blue of the summer sky.

"—known as the 'Test-Tube Man,' forced his way out of his isolated dome and escaped by cleverly converting an automatic freight rocket to manual control.

"Examining experts found that the robot designed to prevent just such a contingency, had been rendered inert through a short circuit or flash-back of some sort fusing several wires of its galvanometric exciter. How Adam accomplished this with the robot specifically conditioned to attack of any sort is a mystery. The Test-Tube Man's attitude toward society is unknown and may well be antagonistic. His guardian, Stanton Rascoe, offers twenty thousand credits to the first citizen apprehending him, or presenting information leading to his capture."

Down!

The three-by-five-inch box in the slender white hand of the young man stepping off the five-mile strip of the fourteenth level observed, "That very versatility in science is responsible for the process that brings you this message. Years ago, Adam devised a special dictawriter registering impulses on a sensitized strip of tape. The strip is broadcast throughout the Americas, actuating the nonvisual voders set on the busiest levels of our large cities, and all pocket receivers owned by private citizens. The strip is then filed for permanent reference.

"Further news will be brought to you as it is received."

The young man looked about him with a pleasant thrill of excitement. "My gracious!" he said. "Escaped! How dangerous. My gracious!"

Down—

The ninth level.

The technicians turned the car over to the

photoelectric pilot, and directed his attention to the compact little televisor set in the control panel of the air-conditioned car. The little sets had only recently been placed on the market and took careful adjustment. They used a very tight, alternating frequency designed so as not to interfere with the car's force field.

A thin young man with a serious intellectual face snapped into view, faded, returned sharply as the technician adjusted the set. This time the image stayed. It was in color, and a rather crude, evidently unperfected type of three-dimensional projection; the young man's voice was very crisp and clear. He had several papers in his hand and said automatically, "This is station TKY, the sound and sight of Cincinnati." A pause, then, "Ladies and Gentlemen, the afternoon news. Hagerstown, Maryland. No trace has been found of Donald Adam, the so-called 'Test-Tube Man.' Adam, it will be remembered, was the son of Richard Goodman, and a mutation as a result of his father's experiments with short hard radiations on the human embryo. After Goodman's death, his nearest relative, Stanton Rascoe, took over the guardianship of Adam, and, as you know, subjected him to a rigorous mental and physical course of training from his earliest childhood in hope of producing a 'Superman,' as Rascoe expressed it." He paused, rustling the papers in his hand. "Washington, D. C. Comptroller of State Maison said today that monopolistic control of solar energy units would be investigated by a special commission—"

And out—

The noise of the rockets was everywhere. It came from no one spot; it filled space. The tiny repair room pounded in sympathy with it, and though the televisor was turned up to top volume the feminine voice blasting from it was just barely audible.

"Authorities believe that Adam will head for Gravite to seek Jean E. Rogers, the daughter of his father's friend and scientific collaborator, James Rogers. Miss Rogers has long been an ardent campaigner for the release of Adam from his stellite dome." There was something unintelligible as the ill-timed freight rockets backfired with a jolt that seemed to split the ship in two. "—to be on guard for the Test-Tube Man. Pictures show him to be a tall youth, exceedingly handsome, with the cutest blue eyes, the nicest black wavy hair, and *such* a figure!"

There was an unsteady laugh, and a lean, muscular hand flicked off the televisor. "Thanks, lady. A little more of that"—Donald Adam's eyes touched upon the metaglass viewplate in the nose of the rocket, looked away quickly—"and I'd 've been swinging from the fluorescents." He took a deep breath, stood up slowly from the worn leather of the acceleration chair.

His symmetry was perfect. No part of his corded, supple body was out of proportion to the whole, and that, strangely, gave the impression of normal build until he was seen at close range. His mouth was wide and quirked up good-humoredly at the corners, his nose was well-molded without being prominent, and his eyes were a startlingly bright blue. A strong face. A trifle immature, perhaps, but strong.

Adam reached over and flipped shut the shield covering the viewplate, feeling as shaky as the old freighter. To spend all your life from your second year to your twenty-first confined to a stellite dome, and then—to see all that glorious, star-spangled, appallingly infinite magnitude spread before you— It hurt down inside. Physically. It always gets you that way. If you're not quite stable mentally, even the psychological preparation the space-transportation companies give you is not enough. To see it just in front of you is not ever remotely similar to seeing it in a three-dimensional picture—you have only the view, not the proximity. Cosmophobia they term it in the psychological treatment stations in Science City.

Only Adam knew what it had cost him to throw off that spell from his vivid imagination, and at that it had been a close thing.

He quickly figured an elaborate calculus problem, keeping his thoughts tense and materialistic, clearing his brain, then turned his attention to bringing the clattering, shuddering rocket back on its course.

The decrepit ship had never been designed for space travel, and there was, of course, no apparatus already available which was capable of receiving the wave signals from Gravite. Adam, however, had rigged a detector which transformed the beam signal into power sufficient to keep a portable Howard-Brazier fluorescent glowing, after which it had been a comparatively simple task to maintain a course toward Gravite.

In his absorption with the painful glory of

space, he had neglected to keep the old rocket on the beam, and the light was out. He pulled on the wrench he had spot-welded to a bar connected precariously to the ship's master control, and the rocket blasted to the left. Too hard. Adam frowned thoughtfully, seating himself in the leather chair again. The tubes were obviously crystallizing in the frigidity of outer space. This, he thought, was going to be a one-way trip. If that!

He took a deep breath, and threw back the shield on the viewplate. He was prepared this time for the spectacle, and could view it objectively if rather shakily.

II.

And then, abruptly, there it was before him —black, pitted, the blinding glare of the sun struggling with the alternate space-dark shadows in the harsh glare of its surface, one hundred twenty miles of barren rock, its sullen bulk an unclean stain against the clear, calm coolness of the far-off stars. Gravite! A city in an asteroid!

In the light of the old-fashioned incandescent lamps, their filament glowing without protective glass in the vacuum of space, the landing field shone resplendent, like a white streak on the face of a Plutonian miner.

The little rocket cut around in a sharp arc, struck the field with a crash, slithered forward, the metal tilting below it; under the edge of the field into a small air lock. There was the sudden *sssssssstt!* of exhausted air and a clang as the field's counterbalance snapped it up again, making the lock air-tight; then once more the bottom dropped out of things and the ship banged into a landing cradle.

At the same instant there was a crack like a stick of detonite exploding and a piece of metal detached itself from the roof of the rocket and hurtled down toward his head. He ducked instinctively, with split split-second reaction and it slammed into the floor. After which, the world turned upside down and fell to pieces.

Adam never knew how he had reached the floor twenty feet away from the rocket in five seconds. There had been nothing of conscious reasoning about it. It was all a confused blur of unbelievably swift reflex action that snapped him out and away from the rocket before the collision had finished splitting it in two, and the pressure of the cradle squeezed the halves out so that they landed one on each side of the cradle and shattered into quite innumerable bits. When his reasoning mind had taken over again, he was standing there a little dazed, but entirely unhurt.

A young man in a greasy tunic came running up, attracted by the noise. He stared at the black mechanic's coverall Adam had taken from the freighter and donned to hide the scarlet and silver uniform he habitually wore in the dome—a costume designed specifically to make escape difficult—then at the ship, and whistled. "Stanley! It sure got busted."

"A brilliant conclusion," said Adam admiringly. "Tell me, do you use the deductive or inductive method of reasoning?"

"Huh? Neither—I just looked at it and saw it was busted."

"Oh. Well, it's all yours now. Scrape up the pieces and sell it to a salvage ship for what it's worth. I'm going down to Gravite."

"I'll buzz 'em you're coming."

"Thanks."

The trim craft in the cradles above him like robot trees in a mechanical nightmare, he went down the narrow aisle, turned left, strode through a shadowy hall, and emerged into the great hemisphere of the top tube level.

The car was a funnel without a snout and stood in a small side dock, several feet from the mouth of the dark bore leading to Gravite's various levels. The conductor, a thin, sour-faced man, sat on top of it. He gave Adam's coverall a contemptuous glance and disappeared into the car as Adam ran lightly up the ladder, dropped atop it with a thump, and climbed down after the conductor, twisting the screw lock shut behind him.

There were a series of spring-harness seats ranged around the circular walls, projections enabling the passenger to reach them.

The driver seated himself in front of a screen and a trio of levers, and snapped: "What level?"

"All the way down," replied Adam calmly.

The driver snarled at this imposition on his common sense. "There're only five levels and no gravity below No. 1. Why don't you people learn something about this place before you come?"

"I think I'd better take over," said Adam, climbing down beside him.

Pursuing this intention with admirable directness, he grabbed the conductor by the neck and seat of his fancy tunic and dumped him out of it, landing him on the floor where

a foot on his neck held him. With a grimace of distaste, Adam pulled on the lurid garment, dropping his own on the conductor's head.

His foot still restraining the other, he sank into the rounded plush of the seat, studying the five dials and three levers banked before him. The dials registered temperature, speed, depth, velocity respectively, while the last was visibly wired to the small televisor plate on the control panel. He released the first lever, letting the car slide forward into the tube, getting the feel of it.

The screen became bright, and a uniformed man at a switchboard appeared. He didn't even bother to look up.

"First level. Any passengers?"

"Two," replied Adam, hoping it was the right thing.

"Slow down for draft." The screen went dark.

The "draft," Adam realized, was the miniature cyclone which might result if the car dropped past the levels at any great speed. The suction created by the pneumatic car must be terrific in the small, tight tube.

"No, thanks," said Adam to himself. "I'll roll my own draft." He released the brake and pulled the first lever back as far as it would go.

His stomach came loose and tried to climb out between his teeth, and he heard the *whooooooooo* of suction as the little car dived down past the first level.

"Peanuts, popcorn, pachyderms, parlor tricks and pickles!" howled Adam. "Going dowwwwwnnnnnnnnnnn!"

A white face appeared on the screen. Its owner quite made up in volume what his voice lacked in coherency. Adam listened courteously until he saw the second level approaching through the metaglass flooring, then excused himself and bellowed:

"Bustles, books, bulls, bones and bubble gum! Going dowwwwnnnn!"

SWWWWWWWwwwOOOOOOOOooooooo-SSSSSSSssssssHHHHHHhhhhh!!!

He turned back to the screen. "Pardon me. You were saying?"

"Wh-what," sputtered the face, "the-conductor-where—"

"At the moment he's under my foot, and I'm learning a lot of intriguing words I've never heard before, thanks to his—"

Adam broke off, removing his foot from the conductor's neck at the same time. There was nothing voluntary about this last action. His foot simply wouldn't stay there any longer. Neither would the conductor. They were floating near the roof.

The car was in the center of Gravite.

Adam casually blocked a clumsy swing from the conductor, swinging him around and holding him off at arm's length with one hand twisted in the man's undervest. The pressure on this flimsy garment brought the man's attention forcibly to his unclothed state, and he snatched the coveralls drifting nearby. He had them half on when Adam managed to open the floor port and shove him through the opening with a well-placed foot, so that he dangled between Heaven and Earth like Mohammed's tomb. Grasping the ring of the escape port, Adam worked himself out with more dignity, holding himself to the car in a crouching position.

Below, the green, cultivated parks of Gravite were a bright splotch of color under the four artificial suns, its grass and trees—almost forgotten anachronisms on Earth—in contrast to the man-made crudity of the truss work that supported Gravite's "sky." The sight of that mass of girders and supports some thirty feet above Adam's head gave him an idea. There was a labyrinth of circulating pipes furnishing air to the pleasure city in that tangle. If he could get into one of the vents, escape was certain.

He was going to have to move fast. Already, tiny figures wearing powerful little compressed-air propellants on their backs and the capes of Gravite's private police were shooting up toward him. The tube-car director had done some quick thinking.

His legs uncoiled and he soared easily upward in a giant leap.

III.

Jean Rogers stepped out of the magnetic lift, paused before the door of her apartment, and waited quietly while the relays connected to the multicellular photoelectric bank on the door hummed a little electric song—checking her with the pattern it was set for. It approved the result, and the door split in half, sliding silently back into the frame.

She went in, said "Damn!" softly as she stumbled over a chair that she could have sworn had shot out fifteen feet for her to bang her shins on. A familiar sensation, even in 2049 A. D.

She groped along the wall with her fingers, found the switch, flipped it on. The light that

instantaneously appeared cannot be said to have "blazed out." Fluorescents do not blaze. While very bright, it was cool, green, eye-comforting, and cast no shadows.

A calm voice said, "Please don't be startled."

Now back in primordial days when cavemen were—well, we presume, cavemen—about the only way one could stay alive long enough to receive the benefit of his social security was to spring eighty feet straight up and clutch a passing pterodactyl at any sudden noise. At a time when the only necessary words were "Uh?" on the part of the male, and a coy "Huh-uh" on the part of the female, the instinct to react explosively to the unexpected was bred into the human race, and is a universal trait. It you aren't startled when calm voices that shouldn't be there tell you not to be, then there's something wrong with your reactions.

Jean Rogers was, accordingly, startled, and whirled swiftly to face the young man in her apartment, astonishment in her eyes. The first inkling that her visitor had then that this girl was *different,* was the fact that she waited until she could speak coherently and sensibly before she spoke at all. She asked, "How did you get in here?"

The question was not unreasonable. Entrance to her apartment was an apparent impossibility. Not only was the building very heavily guarded, but the door was supposed to admit only herself.

Questions, however, no matter how reasonable, had no effect on the young man at the moment. His eyes were popping and his jaw drooped. Adam was not literally floored; the contrary rather, but he was conscious of something resembling a trip hammer going full blast in the general region of his heart. It wasn't

the first time he had ever seen a beautiful girl, but it was the first time he had ever seen a girl like this.

In the first place, her hair was not formed artificially into the shape of a stratoship, a Martian "tumbile" or anything else on that order, which fashion Adam had found exceedingly disagreeable. Her hair was black and it dropped, glistening like a dark waterfall, almost to her waist. Another thing that set her apart was her lithe athletic form, not flaccid and languid like those of other women he'd seen, but strong and supple. Not that her figure suffered any. Too, she brimmed over with health, and that made her different. It was in the dawn-flush of her cheeks, in the quick, graceful way she moved. And there was something even more atavistic about her that Adam couldn't quite find words for—

He had it. Character! It was in the firm line of her lips, molded into the solid set of her jaw, gleaming defiantly out of the warmth of her brown eyes. And there was a quiet reserve about her that seemed impossible to penetrate. A girl like that, thought Adam ruefully, would have to possess something of the sort for simple protection. Only it wasn't entirely that, either. She seemed to be on a plane apart from the people of her world, and unable to comprehend their attitudes, outlook, emotional responses. She impressed Adam as being a defiance to, rather than a product of, her environment.

"Your voice," said Adam dreamily and rather irrelevantly, "is like the tinkling of tiny silver bells in some age-old Tibetan lamasery, calling the ancient gods to prayer through the snow-drifted passes; like gay lambs whooping it up in the springtime, gamboling on the grasses." He paused, intrigued, and pointed out in a pleased, astonished voice: "That rhymes!"

"Perhaps," the young lady suggested thoughtfully, "if you stopped swinging from the fluorescents and tried standing on the floor, we could talk with greater ease."

Donald Adam looked down at the creamy plastic of the floor in vague bewilderment. He declared, "I thought I was floating on air at the sight of you," and dropped to the floor with an easy grace, his true size becoming apparent to Jean. "Always, since as far back as I can remember, I wanted to swing from a chandelier. Perhaps my mother was frightened by a trapeze artist. Anyway, when I saw the fluorescents swinging up there in easy reach, my arboreal instincts came out."

She smiled. It was an odd, Mona Lisa sort of smile, with her curious reticence and reserve in it. "So I see."

"You don't seem very frightened," said Adam. "Suppose I was a desperate fiend. A fiend in need is a fiend indeed, you know."

"My father taught me the not-too-gentle art of self-defense," Jean Rogers told him composedly. "Suppose we go back to my first question— How did you get in here?"

Adam sighed. "You persist in pursuing my method of entrance when I'd much rather discuss something really fascinating—like you. Well, if you must know, I came up the package chute."

"But that's impossible! It's five feet across, stellite-lined, and with nothing to grasp. And the pressure at the most when a parcel is shot up is only twenty-five pounds; that wouldn't help you any even if you had it, and I don't see any packages."

"It was rather difficult, but fundamentally quite simple. I just placed my feet against one side, my back against the other, and worked myself up a few inches by straightening my legs. After which, I'd draw my legs up to my new level and repeat the process. I fell once when I was about twelve feet from the floor, and by the time I was some three hundred feet up at your level, I was almost anxious to fall and make myself a rather small and messy blot at the bottom of the shaft."

"You're jesting. It'd take a superman to—" She stared intently at him and said, "Oh," slowly.

"Donald Adam at your service, ma'am," said the Test-Tube Man cheerfully. "Better known as 'Up and Adam' to my many enemies. You can call me Stinky for short."

Jean's next remark was beside the point and entirely feminine: "What happened to your lace collar?"

"A helluva thing for a he-man to wear. I tore it off."

She laughed. An utterly bewitching sound.

"I think we understand each other. All the trimming and braid the women wear nowadays doesn't appeal to me. I'm an antiquarian from the when-you-were-a-tadpole-and-I-was-a-fish stage; that's why I designed this dress myself along Grecian lines. Like it?"

Adam had realized subconsciously that she was dressed differently from the others he had

seen, but was struck with the difference only now that his attention had been called to it. "Struck" is not quite forceful enough. It whammed him between the eyes like a sledge hammer, and inspired him with an almost irresistible urge to crawl under something and make yipping noises. It was a flowing white robe, sleeveless, exposing the tanned firmness of her slender arms, and falling to her ankles; its Spartan simplicity broken only by a blue belt of some soft material around her waist.

"*Wow!*" commented Adam, digging down into his store of archaic twentieth-century ejaculations for something suitable. "Zowie! Hot dawg!"

She laughed again, and Adam wanted to grovel at her feet and bang his head on the floor in front of her.

"Thank you. That, apparently, means you approved. And I admit that your own tunic is immensely improved with the collar off." She became serious again. "You know, Donald—"

"Call me Stinky," requested Adam.

"—Stinky, you aren't at all like what I'd imagined you to be. I'd read all the ancient fictional books about supermen preserved on microfilm at the Gravite library, and the result was a rather weird combination of Odd John, Victor Scott and Buck Rogers. Horrible thought, isn't it?"

Adam shuddered. "What a combination of extremes you picked! Actually, I'm a normal guy with a few physical and mental abilities not given to the ordinary guy. I've just had more opportunities, that's all."

"Indeed! You collaborated on the plans for this silly asteroid city; you designed the first rocket to reach Pluto successfully; you perfected metaglass so that it *was* transparent, and not translucent like a cloud of dissipating smoke; you designed the first successful space-television set; you composed Vigo, the soil element quadrupling the growth-rate of plants—The list is endless. Light, sound, chemistry, metallurgy, medicine, astronomy, agronomy, horticulture, surgery, psychology, mechanics—everything! Your genius has never been surpassed—"

"Whoa!" Adam grinned wryly and held up a hand. "Boy, I'm hot stuff, what? Letting that go by for a moment, you're getting your terms mixed. Genius is enormous brilliance at one single science or art to the exclusion of the other arts or sciences. Einstein as an inventor or artist would have died from starvation. Edison couldn't have conceived the theory of relativity if he had meditated a hundred years on it. A house built by Wagner would have collapsed in on itself just as he had driven the last nail—crooked, of course. A true superman is one who arrives at conclusion C without having to gather together A and B and ponder the total. His mind skims over the external factors and extracts the total result almost intuitively. It's a matter of mentality and training, not of characteristics, personal traits, inherent feeling for rhythm, color, emotional range or anything of that sort. That's why I'm skillful at all the sciences, and would simply smell if I had to write a piece of music, draw a picture, or write a novel. You follow me?"

He went on, "Of course, up to a certain extent, my music, picture or novel would be good in a limited sense. It would certainly be highly competent. I would perceive, you see, all the technical elements necessary, would assemble those elements into one mathematically precise whole, and the result would be striking from an intellectual viewpoint. It would not be great art. Too cold, too precise, too devoid of human appeal. I could write a sea story with description that would be quite literally unsurpassed—but any story of Joseph Conrad's beside it would make it look absurd. So for the sake of accuracy, remember I'm a superman, not a genius."

"Yes, Bwanna M'kuba. Do you want me to feel your muscle, Bwanna? For a superman, Stinky, you're still not true to the average mental conception. Darn it, I'm going to have to tear up about a thousand circulars stating that you could be released in perfect safety, and would behave yourself like a little man. Now here I come into my apartment, and the first thing I find is you perched on the fluorescents. People expected eccentric behavior if you ever got out, but they didn't guess that your activities would take the form they did."

Adam grinned. It was a nice grin. He had very sound, white teeth.

"Depends on environment. A perfectly average person forced to spend all his first twenty years alone with no one to associate with or talk to, would be an emotional blank as far as other people were concerned. His extreme introversion would make him virtually a psychopathic case. Nothing that happened to anyone else would concern him in the slightest. Now, me, I've been isolated from

contact with people *en masse* all my life, but I've seen them on televisors, read about them in books, talked to a few of them, and longed beyond all expression to share their hopes, their happiness and their sorrows."

His cheerful flippancy was gone. And the abrupt grimness that followed came as a shock to Jean; it brought out the hard lines in his youthful face and took the laughter out of his eyes, so that they were an opening into unguessed things; and she knew then that there were depths to this strange young man which she could never hope to fully understand.

"I never had a normal childhood," he said. "My mother and my father died from the effects of the ultrashort he used in his experiments. Cancer. Internal cancer. A horrible way to die. I was only two years old when she passed away, and he followed soon after. There was in him that true spirit of self-sacrifice which is the basis of all human advancement—he was very proud of me even though I had brought about his death, and, more important to him, the death of the person he loved better than anything or anyone else on Earth. Even went so far as to have my name legally changed to Adam.

"People called him a doddering old fool and other unpleasant things. He wasn't. It was just that he was very old and very tired, and there wasn't anything in the world left for him after my mother died. The doctors told him that he wasn't going to live much longer, anyway, but that if he kept fooling around with hard radiations he'd die that much quicker. I believe that he kept the apparatus going all the time after that—unshielded. He wanted me to grow up normally, to have the usual careless adolescence and fun. His library was full of scientific volumes, and even at that age I could work calculus fairly well, but he kept technical books out of my reach, and was careful to see that I read Stevenson, Dickens, DeFoe, and all the other childhood classics; giving me my science by easy stages. He wanted me to be famous and all that, but most of all he wanted me to be happy, content.

"He was a great man."

"I know," said the girl gently. "I know."

"Some of my earliest memories were of him arguing with my uncle, Rascoe. Rascoe was anxious that I be secluded, forced to spend all my time accumulating knowledge and being built up physically. When he saw how opposed my father was to the idea, he stopped talking about it; and my father made him promise just before his death that he, Rascoe, would not carry through any such scheme. Rascoe promised. It was a lie.

"As soon as my father was dead, Rascoe began planning and constructing the dome. His own father had left him a fortune, and he sank all of it into building the place, outfitting it, hiring instructors to teach me all he thought I should learn. Physical culture first of all. Every morning there were two hours of exercise designed to strengthen every muscle in my body, as well as my sight, my hearing. After which, I'd sit down with my instructors and go through six hours of intensive study. One science each week, alternately. Then I would spar for an hour with a trained boxer who was paid for each blow he landed, and tussle with a wrestler who was, in his turn, paid for every time he threw me. The rest of the night I had to myself as long as I got six hours of sleep. I never needed more."

He cracked his long, lean fingers and the sound was unexpectedly loud in the silence that had suddenly packed the little room.

"The library, like my father's, was well stocked with fiction as well as textbooks, and I had my choice. I could take in a page at a glance, sometimes, but often it would take an entire night for me to finish a book because I would go off into reveries. That, I think, was the only time I was even passively happy. I didn't dream of pirates, or struggles with monstrosities on other planets, or any of the other mad, exciting physical conflict that the average boy imagines. I had enough of conflict every day.

"I dreamed of romance, of companionship, of joking and laughing and feeling with others my own age the friendship and intimacy of thought and experience without which no man's life is ever entirely complete. Proud things, glad things, and, too, sad things to give them poignancy. Things every normal boy knows. I wasn't normal, and I never knew them. That's why I rather ran wild when I finally got out of the dome—I had to rid myself of accumulated inhibitions, release that suppressed emotion, somehow.

"For fifteen years I lived with that futility. There was some relief in the concentration of research work, so I began putting everything I had into it. As I grew to know more and more about the world around and yet so far from me, the thrill of achievement it brought

for a while faded. I found that in this scheme of society the thrill was gone from the new, the novel, the wonderful things. There had been too many incredible inventions and mankind was surfeited. They took what I had to offer and that was all. Perhaps that was one reason why my own inventions stand out so, even in this apathetic age: no one else bothers to invent any more—there is no recognition, and thus, no incentive.

"So you see, I have no real reason for being. I have accomplished nothing of lasting importance, left nothing of true value behind me. My technical achievements benefit only my uncle. And the only way in which my mental and genetical superiority might be of importance is in the taking of this incredibly decadent civilization out of its rut. That must be done, or mankind, with all its hopes, great ambitions, tremendous potentialities, is doomed. How? I don't know how."

There was silence.

The fluorescents were still swaying a little from Adam's acrobatics, and though they cast no shadows, still their slow movement made light ebb and flow like a tide on the white-molded walls of the room, and sent little patterns darting and streaking across the blank televisor screen in the wall. Adam stood beside it, fingering a small perpetual clock abstractedly, the gentle motion of the light giving his eyes a queerly luminous appearance.

The girl sank down on a bench and asked casually, "Tell me, Ad—ah . . . Stinky, how did you manage to put the robot in the dome out of commission?"

Adam's laugh was a trifle forced. *"Muchas gracias, señorita.* That's the second time a female has snapped me out of an introspection just when I reached the danger point. Only you did it intentionally, and I appreciate the fact."

He smiled reminiscently.

"That darn robot. He was a kind of magnified public speaker, with a million responses, the consensus of public opinion on a thousand different subjects, recorded on his memory wires. Trouble was that he was invariably pedantic and trite and sounded like one of those politicians in Yark who travel around the country advising you to re-elect so and so member of the Central Consul. He could only answer questions and respond to simple commands like 'hold this' or 'hand me that,' and since I, being lonely and without real com-

panionship, had formed the habit of talking to myself, he was always startling me by answering some monologue or meaningless phrase with all the information his selectors had remotely akin to the subject. Once I muttered 'Well, whaddaya know,' when I succeeded in an experiment I had thought would be a failure, and it seemed that that mobile machine shop would never run down."

He chuckled to himself for a moment. "Naturally his chief purpose was to prevent me from making any attempt to force the dome. After the age of fifteen, I was alone most of the time except for Percy—that's the robot—and Percy knew enough to prevent me from working with anything explosive or experimenting with chemicals on the wall. And, if I had tried to attack him with anything, he would have held me tightly, but painlessly, until I gave up the struggle. His eyes were faceted, recording every movement, and he wouldn't touch anything I didn't put my hands on first.

"For a while I pretended to be working with high frequency on germ eradication. We stayed on those experiments longer than I expected because they indicated that there might actually be a way to destroy the more harmful microbes electrically. But it wasn't by high-frequency current, it was by supersonic waves which blew 'em up by vibration without harming humans in whom they were lodged. I'm disgressing. Anyway, after conditioning Percy to the idea that high-frequency current is harmless, rigged up a rod insulated at one end and connected it with some ten thousand volts of raw current. Then, pretending to work on an invention on the table, I handed him the uninsulated end of the rod and told him to hold it. He took it.

"Bluntly, poor Percy blew a fuse.

"The lock was a relatively simple five-place problem combination I had managed to work out secretly sometime before. After that—"

He told her the story of his travels after the escape from the dome, concluding with, "The circulation tubes and package chutes both lead to the automatic plant supplying the compressed air necessary for their function. The tubes are distributed in an orderly arrangement, according to the district they serve, in order, I suppose, to make repairs easier. After fumbling around for a while, I found yours and here's me."

Jean confided, "I was out looking for you after I heard you had escaped from the tube car, on the thousand-to-one chance that we might accidently encounter each other. Not that it would have done me much good. Rascoe buries all the information about you he can and distorts the rest by spreading rumors." She laughed. "Frankly, I expected you to be a dwarfed, disagreeable little man with weak eyes and physique, wearing glasses with lenses as big around as passenger-rocket injectors, almost impossible to get along with and unable to conceive of anyone or anything more important than yourself. Instead you're—" She hesitated.

"—a callow youth with big muscles, an inane grin and a conversational vocabulary about as intellectual as an engine wiper's on a space barge."

"Not at all," replied Jean, with that quiet, infuriatingly restrained smile, "just very human and likable, that's all." She had a habit, which she shared with Adam, of changing the subject with bewildering rapidity and without preliminary announcement. Hence, he was not surprised when she asked almost in the same breath, "What do you intend to do now?"

He strode restlessly up and down the inlaid floor, his heels making little noises that whispered back and forth from the walls. Jean Rogers kept her eyes fixed intently on him. She couldn't rid herself of the notion that she was about to see history of some sort made; that the decision this extraordinary young fellow came to in her room would affect the entire world. She realized that she was holding her breath and let it out unevenly.

Adam turned and said, "I want to kidnap my uncle."

Jean was conscious of an almost hysterical desire to break into laughter. It was weird! Here was the peak, the ultimate of his kind, with the world at his feet, with the ability to take everything he wanted, to even conquer and rule all mankind—and instead of declaring his intentions to dominate inferior Homo sapiens or something equally momentous, he merely wanted to kidnap his uncle!

Adam understood the expression on her face, and gave her a twisted smile. "Sounds foolish, doesn't it? Well, there's more to it than personal revenge. My uncle has slowly, through his former control over me and my discoveries, extended his political power over almost all the Americas. With mankind's

present lack of fighting spirit, he could take over everything with very little trouble. And I'm not going to let that happen."

"The city is a chaos; you won't be able to steal another ship."

"That's a chance I'll have to take."

She stood up.

"Not if we go in my rocket."

Adam spun around. "*We?* You can't—"

She blew on the palms of her hands, made washing motions with them, and told him, "If you won't go, I'll do it singlehanded. And—" she continued, as he opened his mouth to speak, "you aren't going alone with my rocket. It'll take two. One to bust it and get him, the other to keep the rocket ready. Bargain?" She extended her hand. Adam took it hesitantly, and it was the first time he had touched a woman since his mother's death—the thrill as he clasped her cool fingers in his was comparable to the time in his childhood he had impulsively grabbed the exposed terminal of a solar unit.

"Jean—"

"Call me Ali Babble."

"Ali Babble, you're the finest girl I've ever met."

"Some compliment. I'm the first, so no wonder. Anyway, that's enough to repay me, Stinky. My rocket's on the roof. Let's go."

They went.

IV.

The ship was perhaps thirty feet long, glistened silvery in Gravite's bright artificial illumination, and was christened *Space Sprite*. It was a two-passenger speedster, one of the fastest crafts made for short-distance runs, and certainly the most maneuverable. A thin metal ladder ran up to the throw cradle that held it. Jean ran lightly up the ladder, followed by the Test-Tube Man. She worked at the ponderous, pluglike lock for a few moments, then it swung smoothly open.

The interior of the rocket was one shining mass of gleaming, polished metal. The controls were on a table-top expanse of shining metal—all dials and white buttons and levers. A long bar with a footrest came from under the table; the whole had the appearance of a large desk.

"Obviously an atomic conversion type." Adam was speaking. "But what a maze of controls. Bet the guy that designed 'em didn't know what they were supposed to do himself."

Jean gave him a whimsical smile.

"Oh, my! I *did* invent those engines, didn't I? I'd completely forgotten, what with the trimmings and fancy outfitting and everything. Here, got a wrench. Thanks. Give me fifteen minutes to see where the leads are, and I can handle this thing myself."

Quick repairs may mean life in space, and the top of the control panel was designed to come off quickly. Adam's face disappeared into the interior like a seal diving for fish. Ten minutes passed, with discreet silence on the part of Jean, and occasional muffled profanity from Adam whenever blue sparks jumped out and bit him.

No better lubricant than oil has ever been discovered, and Adam emerged with his face black with it, due to his habit of rubbing off on his face any excess that made his hands slippery.

"All you need," the girl informed him, "is a banjo, a big grin and a dialect. Wash off that old-fashioned minstrel complexion in the lavatory over there."

Adam did so. "They've simplified the setup somewhat," he announced, reappearing, "and it's definitely an improvement, 'cept that they substituted a platinum filter of mine for a more economical metal I don't recognize. If we only had a piece of platinum in there, we could outrun anything except a Space Patrol ship."

The girl was working at her small perpetual wrist watch. It came off, she detached the band, and handed it to him.

"Pure platinum."

Adam didn't look at it; his eyes were intent upon her face. He said, "I've no way to repay you, you know."

"That's an insult. Take it and don't talk back or I won't let you play with my rocket."

Adam put his two hands gently on her shoulders.

"I"—awkwardly—"I don't know how to try to thank you. You've done more for me, a stranger, than anyone else would have done for an old friend. You might even be risking your life for this brain wave of mine. My instructors taught me a lot, but they never told me how to express my gratitude for anything like this. Perhaps they never thought it would be necessary."

The girl said, "Maybe I like your looks." Abruptly, "Do you want to try to take the ship off?"

"Sure. Sure, I'll try."

With a welding torch the platinum was put in place, and the panel top went back on again. They settled into acceleration chairs, and Adam pushed the button firing the remote control crane.

There was a sharp pound of metal on metal, the *hiiiiisssssss!* of sliding beryllium, then the ship whipped off the roof. For one horrible moment, as he jerked the combustion switch to ON position, Adam was uncertain whether or not he had reconnected the firing wire. Then the rockets came to life with a rather muffled explosion, and settled down to a powerful and comparatively silent prolonged swoosh of a noise. Adam fired the underjets, leveling the craft; cut the rear rockets down to idling speed, and asked, "How do we get out of this hunk of rock?"

"Over on the far end there—push the slide key down and forward. That's it. It's a directional beam finder. Now cruise around until the red light on the board flashes and keep going straight ahead as long as it stays on."

The little ship drifted forward. Fifty seconds later the red light flashed. The girl reached out a slender finger from her chair and tapped a button. The dark screen above the control panel lit up.

"All the comforts of home!" exclaimed Adam. The screen showed Gravite below, alive with color, flinging metal arms up to its unnatural sky. The screen, itself, was a combined televisor-telecaster, revealing everything within its wide range of reception.

Directly ahead of them rock glared with dull resentment under the light of the quadruple artificial suns. The huge hole extending back into it was abysmally black. Adam jockeyed the ship easily into the opening, dropped it to the flooring. They heard the clamp of electromagnetic grapples against the hull, then were hurtling along at tremendous speed.

An air lock shut audibly behind them, the sense of hauling vanished, and the stars appeared instantaneously, as if a curtain had been snatched from the heavens. They were in space.

Adam found the terrestrial signal, set the blasts for capacity, locked them, and turned the controls over to the automatic pilot. There was a compensator inside the controls that would place the rocket back on the beam if it deviated in any way.

He asked the obvious. "Why are these controls blind? They should be labeled for safety."

"Training ship. My father got it at a big discount from the manufacturer. He knew rockets intimately, and didn't need indicators to show him what to push. He taught me all he knew, so I didn't need them, either."

She hesitated.

"I'm going to tell you, Stinky, something I've always kept a secret from everyone. With one stipulation: you're not to laugh or to make fun of my father because of it. Such things are ridiculous when they don't work out, and this one didn't. Promise?"

"I promise."

"All right, then. You remember the Haldeman Hoax?"

"2037, and it wasn't really a hoax since Haldeman believed it himself. He was an amateur astronomer, a trifle unstable emotionally and mentally, and the first to catch sight of a wandering comet with an extremely erratic course which had prevented its previously being charted. His figures showed that it was headed in the general direction of Earth, and were published with an almighty whoop and holler. Other astronomers checking his figures and finding them incorrect—discovering that the comet would miss Earth by about five thousand miles—couldn't make themselves heard because of the howl Haldeman made." With a guess at what might be coming, he added. "Haldeman made his calculations sound very logical."

The girl smiled her tight, lovely smile. It had a touch of wryness in it. "Foolish Question No. 1. Forgot that you were the first to check Haldeman's figures and deny them, my modest lad. Well, anyway, Haldeman put the emphasis on the comet's erratic course, saying that in space a minute deviation might cause collision even if his figures were off, and that five thousand miles was the length of a hairbreadth at the speed the comet was going. Father, not being an astronomer, never realized that the crooked course of that celestial visitor was measured by light years, and that it couldn't possibly swerve enough to collide with Earth. Your own figures allowed for the attraction of terra, of course."

She took a deep breath, went on:

"Father went to great expense to establish an extensive laboratory and living quarters under Ganymede. It took every credit he possessed, except for what he put into trust

for me. Robots did all the boring, blasting out the ground into a small city of caverns. He installed heating equipment and other such things, and stored away immense quantities of food, enough for many generations. I imagine that he expected to bring along a good many of his friends and start a last colony of human beings if his worst expectations proved justified. They weren't, and he was always ashamed to tell anyone of the trouble and expense he had gone to so needlessly. I'm the only person who knows of it—or, rather, you and I know. The exposure and exertion killed both of them shortly after. My parents, like your own, decided not to have children until the genetic experiments proved out, you know, and that wasn't until they were middle-aged."

"I see," said Adam.

"This rocket was part of his plans; it was the fastest thing he could find outside of a patrol ship and those were unobtainable."

Pause.

"How do you intend to capture uncle?" asked Jean, changing the subject with her usual rapidity.

"Just charge in, grab him and charge out again, I suppose."

"He'll be surrounded with his own private police. They're the sons of the original members of Roger Stanley's Venusian colony, mostly, with a scattering picked up here and there of miscellaneous toughs. They're pretty rough customers by any standards, and hulking monstrosities in comparison with the Fauntleroys most of the males have become in this day and age."

"I've a plan concerning them. You let me down near this place—I presume you know its location? Good!—and circle around for a while until I come back. If I don't return, blast home and forget about me. All clear?"

"All clear," said Jean. She avoided his eyes.

The dot that appeared on the screen became a round balloon, continued to expand. In the utter bare, black vacuity of space, the bold glowing warmth of its green and blue seemed out of place, lost, almost alien, like a cheerful little fire in the crushing midst of the darkest night. The impression faded as the planet filled the screen and continued to grow, until the illusion became that the Earth was familiar and right, and the limitless depths of space foreign, insignificant.

The clamor that broke the silence of the room was terrific, making them both jump. Jean reached over and threw out the robot pilot, stopping the noise. "Atmosphere warning. You've got to have a human hand to guide a rocket in air, you know. Better let me take over."

Adam threw the robot back into position and the awful clanging broke out again while they exchanged seats unsteadily in the swaying ship. Jean strapped herself in, cut out the robot and noise together. Her white, quick fingers blurred over the reaction studs before her.

The rockets burst out beneath the hull and the ship became parallel with Earth and hurtled south to Yark. The minutes it took were traversed in silence.

Then it loomed up in the screen, majestic, towering over all creation, supremely arrogant and supremely magnificent. A city spreading over a hundred miles of Earth, seeking the sky and nearly finding it, all metal and glass, glimmering in the sunshine like an unthinkable ant hole, the strolling people below the ants and the tremendous depths of the city their holes.

"Incredible!" muttered the girl, who had seen it before. She heard Adam paraphrase under his breath, "But what shall it profit a man if he gains all and loses his own soul?" Then she fed power into her left jets, and the rocket soared around in a gigantic arc. "I won't use a cradle; just pick a slide, drop you, and take off again."

Adam, preoccupied with the vision of perfection on the screen, said nothing.

The girl swung the ship deftly down to the broad expanse of the landing platform, chose a "V," hit the inner edge of it with a slight jar, and tromped the bar coming out by her feet hard. It was a brake releasing all power into whatever portion of the rocket it was directed, in this case the nose. There was a *blam!* the rocket came to a sudden halt, and she cut the power.

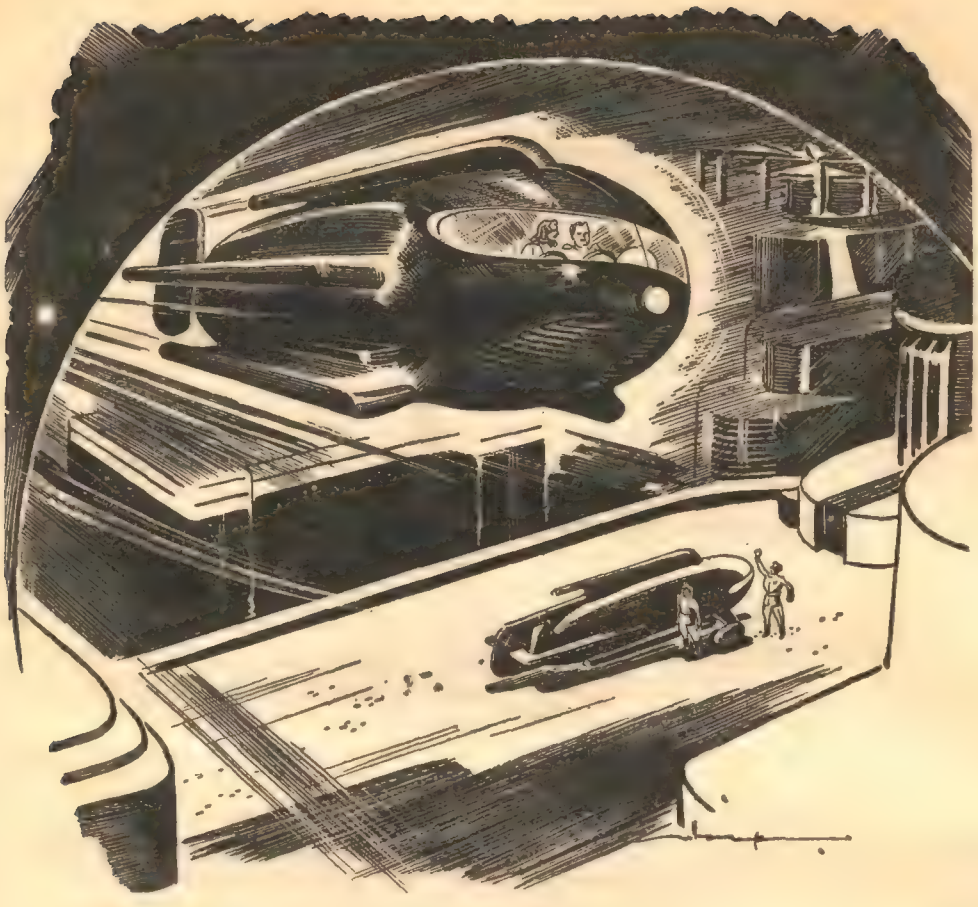
"You'll be careful, won't you, Stinky?"

He released his belt, stood up.

"Sure. Now you get away from here and stay away until you see me again, understand?"

"Yes. Take the tube down to eighteenth and ride the roads west until you see a building with 'Rascoe Enterprises' on the front; you can't miss it, the biggest thing in that section of town. Good luck, Stinky."

He thanked her, warned her again to stay away until he reappeared, then the inner air



lock hissed shut after him. She heard it clang on the outside and sat staring at it a long time before turning back to the controls with a tired sigh and firing the rear rockets; ramming through the ends of the V, off the end of the platform, down the long slide into space.

V.

Adam stepped from the twenty-mile strip to the ten and from there to the stationary metal of the walk. Beyond the guard rail the city fell away into a dizzy abyss, dropping down to the first level. That meant that, two levels being underground, he was actually sixteen stories above ground level.

He hesitated before striding across the ramp leading to the building.

There was something wrong.

A frown spread over his face as he realized what it was. The activity around the building was too peaceful, too quiet. A dozen or more ramps led from every angle of the various levels to it; it was the tallest building in this city division, and the only one with the circular monocar highway that spiraled around it all the way up and connected with every story —a device found only on the most important buildings. In addition, it had a landing field on the top, the hundredth story, and only one other building exceeded its height—the uptown Central Consul Administrative Center. The various levels and ramps should have been black with people; and there were only a few strolling here and there, obviously without any particular destination.

"'Will you step into my parlor? said the spider to the fly'," murmured Adam. He strode purposefully across the ramp to one of the building's main entrances.

Its construction was the first unique thing that had been introduced into Yark in many, many years. Each story—comprising in height three of those in a twentieth-century building—was set back from the other some forty feet, in tiers, so that there was a wide walk, broad enough to land a speedster on, around every tier. There were tall, narrow entrances at each level, with a large hall entrance at every fourth tier. Adam headed for one of the latter. He was thinking soberly that a man who went around thinking up

things like that was going to be quite an adversary.

The opening into the hall dwarfed him. It was a full story high. The hall beyond was brimming with men, all of them tiny in that colossal room.

Someone saw him and shouted.

"I think," said Adam to himself, "that I'd better see how fast I can get to those magnetic lifts!"

He did it in precisely five seconds flat, bowling over two men. He had a glimpse of a panting thick-set man with a very red face, then the door swung shut with a clang, missing the latter's nose by a fraction of an inch, and he threw the control lever. The lift shot up—

In the hall the crowd howled as the indicator showed the upward motion of Adam's elevator, and crowded into the lifts as tightly as possible; they howled again and threw their own cylindrical cars upward; after which, the remaining people howled loudest of all when they saw that they wouldn't be able to join the chase.

In his own elevator, Adam watched the dial until it reached the twenty-ninth level, flicked the lever to down position and stepped on the release.

It was a free fall until shock absorbers in the shaft took hold with metallic noises and the lift began to slow at once, taking all his strength to keep from falling to hands and knees.

It came to a smooth halt. Adam threw back the sliding doors and stepped out on the bottom floor of the building.

The little basement room into which he emerged was full of grime, a great switchboard, and a massive hulk of a man with very faded red hair and a much battered face. The latter stood with open mouth while Adam went calmly over to the switchboard and yanked down four switches of the five controlling the lifts. The one he left was that furnishing power to his own.

"What the hell!" said the mechanic.

Adam snapped, "What floor is Rascoe on? Quick!"

"So," said the mechanic, in pleased comprehension. "So you're the superman."

He reached out, took Adam by the front of his tunic with a ham of a hand. "Listen. I was born in a tramp rocket back in the days when you had to be tough or you got your injectors blown for you. I've licked every man in this sissy civilization, and I hear you're the only competition left. So I'm going to knock your guts out."

He swung his fist around like a knotted club. It was a fearful blow. If it had struck, it would have been sufficient to break in the side of Adam's head.

It didn't land.

The mechanic never was really certain what happened next. It seemed impossible for any man to dodge that fist. It would have been impossible for any ordinary man. Adam was no ordinary man.

The fist came in contact with something harder, deflecting it off on a tangent. Something equally hard exploded in the mechanic's face and he flipped over in a backward somersault. He was immediately jerked up and slammed against the wall with his feet off the floor. He stared down blankly at the hand holding him there and said, "Uh! Uh! Uh!" in a thick voice.

"Stanton's office!"

"Uh! Uh! Uh!" said the mechanic.

Adam took the mechanic's greasy hair in his free hand and started banging his head against the wall.

"Uh . . . *ow!* F-fifth floor, first t-turn to the left! *Ouch!*"

Adam threw him in a metal locker, banged the door shut and locked it, and pounded loose the partition in front to give him air. Then he stepped back into the lift.

He smiled once going up at the sound of hoarse male voices wailing in unison in adjacent shafts like a flock of banshees competing in a hog-calling contest. The elevator shafts were really long tubes lined with a series of heavy rings. As each ring was magnetized it drew the tight-fitting car up to it. The contact of the car with the ring automatically cut it off and actuated the ring above, and so ad infinitum. Once the car gained impetus it was as swift in movement as it was steady. Coming down, one simply set the lift for a certain floor, cut the power, and the car automatically stopped at that floor. If the power was cut off completely, safety devices brought the lift to an instant halt. The pursuers were consequently trapped between floors, safe but out of any action that might develop.

A meter flashed the number five and the car stopped. He slid back the gate and stepped out. The hall was empty. He went down it, turned to the left and paused before a heavy door. No way of breaking through that.

He put a hand before his mouth, muffling his

voice, and shouted, "Mr. Rascoe!"

"Yes?" came a suave voice from within.

"Adam! He came in and was mobbed!" Which was the literal, if not entirely complete truth.

The door was snatched open a crack, and a face peered out. There was a gasp and it was flung shut again—to stop short as it encountered Adam's foot. An outflung arm sent it flying back with a crash, and he entered a combined reception room and office, luxurious. Leading out of it into another room was a door. He tried the handle. Unlocked. In he went.

His uncle said, "You really should be more cautious, my dear boy. I might have blasted your head off, you know."

The office was amazing. Not only in its furnishings—the tapestries, pictures on the wall, and so forth—but in its size. Everything was twice as large as normal. The tapestries covering the walls were priceless, and cover the walls they did. The pictures were museum pieces, their cost beyond estimation, and seemed specifically selected for their size. The desk behind which his uncle sat came almost to Adam's stomach as he stood erect—a size appreciable only by comparison—and the dictawriter that stood on the oversized stand was queerly out of place in the wealth around it—a towering relic over ten years old.

There was only one exception to this giantism—Stanton Rascoe.

Most midgets are out of proportion in some way. Rascoe wasn't. His arms were the right length, his legs were the right length, and in his earlier days he must have been an extremely handsome man. Now he had gray hair and bushy white eyebrows, but there weren't many wrinkles in his tranquil face.

"Shoot me?" said Adam. "No, my dear guardian. You would be careful not to have a blaster anywhere in your office, and to forbid your men to carry one. I'm much too valuable to you, and besides you're certain that I won't get you out of here without being captured. You're wrong there, but we won't argue the point."

Only his gigantic chair brought the little man's head above the level of the desk, so that what he drew out when he reached into the pocket of his skin-tight and theatrical space tights—patterned along the lines of those long worn by rocket men to facilitate the donning of space suits—was not visible. He kept his eyes carefully on Adam, who stood quietly, his face a blank citadel guarding his emotions. The hand came into view—with a huge, old-fashioned pipe.

Rascoe smiled.

"You have the courage of your convictions, Donald. A trait I have always admired and followed in my own rather peculiar way." He tapped tobacco into the antique, scratched one of the matches that were especially made for him and a part of his pose, into the bowl. "So, Donald, you intend to kidnap your old uncle, eh? I hardly expected personal malice to lead you that far, lad."

"Your knowledge of semantics does you credit, uncle. 'Personal malice' is particularly good. You know as well as I that the resentment I frankly bear you would find no such outlet. The fact that you robbed me of every product of my mind and even of my very birthright is not pleasant to contemplate, but it is done and, time travel being an impossibility, cannot be changed. My quarrel with you is a quarrel for the entire human race."

His voice was low and tense.

"Through me, you have managed to work yourself up to a position as one of the richest men in this world. But that is not your purpose. You were always wealthy, and have never been particularly anxious for more—"

Rascoe bowed ironically. "Thank you."

"—but for power, Rascoe, *power!* Domination! The rule of mankind. It's your dream, day and night, your life, the sun around which all your actions revolve. You want to take over this degenerate world by control of its economic resources, and gradually you have become capable of doing just that. You've even extended your power until you're able to influence the Central Consul to assist you in some vast, secret mission you're planning—"

Rascoe's chair went back with a crash and he was on his feet, trembling, his face dead-white.

"*How did you know that?*"

"I didn't until now," said Adam.

Rascoe's self-control shattered completely. There was an animal snarl of defiance in his face, insane desperation in his eyes. Both faded as reason returned, but Adam knew then that he had looked into the maelstrom of an unbalanced mind, and the experience was one he never forgot.

Rascoe regained his suavity and his seat. He leaned back into the latter, propped his feet on the oversized desk, and blew a cloud

of blue smoke. "Very clever, Mr. Adam. I congratulate you."

Adam was standing in front of the tall window, gazing out over the city, his hands behind his back. Without looking around he said, "Shall I tell you what you are, Rascoe?"

"Do."

"You're a paranoiac, Rascoe, along with a number of other things not so nice, either. Inferiority complex, for one, to go with your delusions of grandeur and persecution complex —by themselves a hellish mixture for any man to suffer, together—

"Your parents were primitive, Rascoe, backwoods people, with all the primitive's fear of the unknown, so you were conceived under primitive conditions. Although your parents were normal, you were born a midget. In this century you were as out of place as a caveman with five legs. They laughed at you. Not openly. You could have faced that and fought it. Behind your back.

"The injustice warped your brain. Here you were, a handsome, healthy young man in his early twenties, handicapped by a ridiculous lack of size that brought none of the fame, respect or love to which you had a right—that brought only contempt and laughter. And it hurt. It hurt beyond all bearing.

"Perhaps it was all this together, or perhaps it was that some normal woman refused your love or—"

The whisper from behind him was almost machinelike in its monotonous repetition; but no machine could ever express that black hate that crawled in that voice.

"She laughed at me, damn her soul. Laughed. Laughed at me, damn her. I'll get her; I'll get them all. Laughed at me—"

Without looking behind him, Adam asked with grim intensity, "What are you up to, Rascoe? What are you up to?"

Rascoe said, "I'm going to be God.'

"You're mad," said Adam. His voice wasn't steady.

Rascoe laughed horribly.

"I'll play God. With you, Adam, with you. With all mankind. Your germ plasm. I'll impregnate all the women with it artificially, and create a race of supermen, and be king of them all. Me! The undersized, pitiful little runt she laughed at. Me, Adam. And my scientists will take the embryo of the new supermen and work with them if they are not perfect, and the supermen will have giants and other monstrous things to be amused by and to work for them. They'll all grow up under my training and I shall make them obedient and they shall know me as their god and their only god forever and ever and—"

"You're mad, Rascoe," repeated Adam. "You're mad." There was sweat glistening on his forehead, and a harsh uncertain edge to his breath. "You can't interfere with natural selection that way, it can't be done. The horrors you would produce by forced breeding would be—"

"I can do it," said Rascoe. "The Consul isn't certain what I'm doing, and they'll work with me as long as they don't suspect the whole truth, and as long as I remind them in a nice way of the accidents that could happen to their families. I can do it and I will. No one else but me could do it, but I will."

Adam turned.

"Suppose I killed you."

Rascoe laughed again. The sound rang harsh and hate-haunted from the wall, like the clangor of metal. His own emotion was fast shaking him loose from the remnants of his sanity.

"You won't, Adam. It isn't in you. I was careful to see that your conditioning, during those early years that determine a man's character, included a healthy respect for human life. You can kidnap me, but sooner or later I will escape or you will be tracked down because of my importance, and I will have my wish with you. There are ways—"

"No," said Adam. He smiled, a sad, grave smile, with a streak of resolution running through it like a vein of iron in the soft earth. "No—

"You're going along with me. Some day I'll find the will to kill you. I pity you, Rascoe, but it's either your life or mankind's, and the choice is mine."

He felt very tired and old, and life had grown somber and serious and solemn all at once, so that he wasn't able to take it all in. He had, in that moment, become a man.

Rascoe was sitting in the middle of the floor, sobbing like a small child. There is something very terrible in the sight of a man crying, and Adam felt it as he picked up the tiny figure gently in his arms. It made no resistance, and he went slowly out of the office, into the elevator, down to the hall level.

The door to the elevator swung back, revealing a crowd of men anxiously waiting around the lifts. They stood stunned at the sight of him carrying Rascoe, and he had bat-

tered his way halfway across the room before one of the men caught hold of his legs, and another sprang upon his back. Instantly others piled on.

There was a fight. There was one hell of a fight.

VI.

The weight of men on his back brought Adam to his knees. He was up again quickly, shaking off men as a terrier shakes off water. He swung Rascoe in a short vicious circle by his ankles and made thirty more yards before someone darted in and hit him on the side of the head from behind. Adam staggered, recovered, feinted and with blinding rapidity struck with his left. There was a noise like an atomic vortex letting go, and the attacker went walking backward very fast until he collided with the wall. His legs slipped out from under him, and he sat down hard with a glazed look in his eyes.

Adam reached up with one hand, grasped the man who had sprung on his back, jerked. The man threw up his legs and went sailing through the air. In almost the same second, Adam jabbed his elbow into another's face, hit a man in the mouth, and punched his elbow into a third's stomach.

Someone aimed another punch at his face. He ducked and knocked the other off his feet. Then four landed on him at the same time and the five of them went to the floor with a crash.

Adam found a head with his right hand, grabbed another head with his left, and brought the two together with a dull knocking sound. He rolled and planted his feet against the chest of the man who had hold of his throat. The would-be strangler landed eight feet away with a frightful bang.

Adam was on his feet, dragging the remaining man with him. This last tore loose, and began dancing around, his fists up in a pugilistic position. Something he didn't see hit him in the stomach, and he bent over yipping in pain, to be snapped erect by a fist. He stood upright, swaying, for a moment, a foolish grin on his face, then sighed and lay down carefully on the floor.

A bench was swung clumsily, and Adam batted it down, kicking it back sharply into the shins of the swinger. The bench wielder put his feet in the air and his face on the floor

A burly man charged, head down. Adam stepped lightly aside and kicked him in the temple as he went by. The man continued his charge for a few more feet, then fell down and slid the rest on his face. Adam parried the roundhouse right of another private policeman, and hit him so fast the man swore after regaining consciousness that Adam had not moved at all.

That left the ring temporarily clear.

Adam stood a little unsteadily on his feet, blood running down the side of his mouth, his tunic partly torn off his body, and stared about for Rascoe. The reason for the respite became evident—a group of special police were hustling his guardian toward the door in the hall, while another band blocked his way, covering their retreat. They didn't look at all happy about it.

Destiny, the fate of the human race, was a crossroads in that instant, before which a traveler stood, uncertain which way to go.

The traveler was Adam.

If he tackled the men blocking Rascoe's departure, they would slow him enough for Rascoe to escape. Somehow he had to overtake the midget's escorts before they reached the main entrance.

He bent at his knees, gathered all his strength, and sprang straight upward. A prodigious leap!

From the roof of the hall a sono-amplifier dangled from a heavy cord, enabling all the hall to hear a speaker's voice. It was so highly sensitive to sound when in operation that there was no need for it to hang nearer than twenty feet to the floor.

Adam caught it with one hand and hung for a moment. Then he began to swing his body back and forth until on each end of his swing he was almost touching the roof. Back—back—up! Then, the wind ruffling his hair, down he came, swooping twenty feet above the floor and once more soaring up toward the roof.

When he reached the limit of his forward swing, he released his grip on the cord and was flung outward toward the little group standing petrified in astonishment near the entrance. He had one moment of godlike suspension forty feet above their heads, then they seemed to hurtle up toward him, growing larger as they came.

If he had misjudged his distance and struck that floor—

The men on whom he landed went down with squalls like mashed cats. The collision knocked all of the breath out of Adam, and most of his consciousness. He lay there

stunned for a long minute, then swayed to his feet, snatched Rascoe out of the pile and weaved uncertainly through the door.

He fell down outside, and regained his feet with an effort that tore his brain out by the roots. Everything wabbled and whirled before his eyes. The ramp. Where was the ramp?

Someone came up behind him and began to beat him over the head with the butt end of a forbidden blaster, making tiny grunts before each *thup!* and he sank to his knees, his head a churning, stewing bowl of agony. He twisted, got the wrist, and was vaguely shocked at the ease with which the owner jerked it away.

There was a roaring in his head and he wondered, a little, why it stopped. He considered the problem abstractly, with the perfect emotionless stasis of approaching unconsciousness, and came to the conclusion that it was a rocketship. That satisfied him strangely, and he waited with impatience for the man above to strike again. He heard the characteristic little grunts, and knew that the gun swept down—

There was an angry woman's voice, a sharp yelp of pain, and the heavy thud of a falling body. The sound of that lovely, familiar voice ripped like a lance through the dull veil of pain that held Adam. He wabbled to his feet, forced open his eyes.

Jean Rogers!

She was standing in front of him, her attitude challenging all comers, the man she had thrown lying at her feet.

She glanced over her shoulder, saw him. "Adam! Into the rocket. Hurry!"

That brought the three men facing her into

action. One came forward. He was grim. "Lady," he said, "you sure asked for it."

He lashed out with the palm of his hand.

Jean ducked, blacked both his eyes, caught his wrist and twisted it behind his back, bending him over. She kicked at the most obvious spot with one dainty foot, and he smashed headfirst into the wall and fell into a heap.

It all happened in a second, before Adam could force his weakened body into action.

The other two men were more cautious. They approached her, one on each side, and rushed. She waited until the two were almost upon her, and dodged nimbly aside. They ran into each other ludicrously, the whole more like a televisor farce than anything else. A remaining guard came running out of the hall and watched open-mouthed as she doffed her slipper and knocked the nearest of the two fallen warriors unconscious with the heel.

The other man gained his feet and charged at her making little hissing noises, reaching for her throat with his hands.

The girl caught him by the wrists, went over on her back, put her feet in his stomach and yanked. There was a flash of trim feminine legs, and the man, Jean still holding his wrists, went over her head and measured his length just beyond her.

She jumped to her feet and darted over to Adam. The guard who had come out of the hall and had been standing near the Test-Tube Man, backed off and said hoarsely, "I don't want no fight, lady."

Jean had hold of Adam's arms, urging him toward the rocket. He shook his head dazedly, looking about for Rascoe—and, finding him, felt horror surge and flood through his muddled brain.

He was standing there slobbering, blubbering, the blaster in his hand, and saying over and over, "You won't have him, I'll kill you, you won't have him, I'll kill you—"

The blaster was pointed at Jean. There was no doubt whatever of his intention to shoot.

The danger snapped Adam's reflexes into action. With the last of his strength he caught the guard and flung him toward his uncle. The two hurtled into each other—and Rascoe went over the ledge. The guard scrambled frantically, nearly went with him, drew himself back up, and lay white and trembling on the ledge.

Adam, sick with nausea and revulsion, watched his uncle drop downward, twisting and turning, into the gulf. He had an impression that he heard him strike the bottom level, but was never sure.

The girl caught him as he fainted.

VII.

Adam regained consciousness with the idea that a fly was hovering annoyingly over his eyes. He snatched at it with a lightning-swift movement and found that it wasn't a fly at all, but Jean Rogers. She had a white cloth in her hand and was bathing his eye with water.

Adam sat up, had an impression that the universe was blowing up, and lay down again until the throbbing in his head subsided. He was lying on the floor of the *Space Sprite*.

Propping open one eye with difficulty, he focused it on Jean with a battered grin.

"It was a hard fight, mom, but I lost."

She was carefully cleaning a deep cut through the side of his tunic and didn't look up. Her voice was low, almost inaudible over the steady whispering roar of the engine. "Any other man would have been in the hospital by now and sinking fast." A pause. "What happened, Adam?"

He told her, watching all the while the white glowing beauty of her face, framed by and contrasting with the dark glory of her hair. Adam realized with a little start what pleasure it would be to touch it, how it would feel to his hand, running through it—

He finished the account and there was silence. The girl kept her face from his eyes, and in a monotone, referring to Rascoe, "It's better that he died as he did."

Adam said, "Yes," softly, and again there was silence.

The girl broke down. It was as abrupt and unexpected and shocking as that. One instant she had looked up into his torn and bloody face, the next she was all woman, sobbing in his amazed arms. "Oh, Stinky, you're an awful mess!"

"Not just physically, either," said Adam. He crooked a finger and tilted her chin up until he could meet her eyes. They were red from the weeping she had obviously done before he regained consciousness, and a trifle swollen, but for him they were the most glorious sight in all infinity.

"You love me, don't you?"

She nodded mutely.

"Well, I'll be damned!" said Adam.

She drew away from him and smiled tremu-

lously. It was a radiant smile, utterly without restraint. No woman smiles at a man whom she has judged and found worthy like Mona Lisa. That smile jarred Adam worse than any blow he had received during the battle with Rascoe's police.

"I'm all right now. Sorry I lost control."

His fingers were tight upon her arms.

"Listen, Jean. I love you. I love you more than I ever dreamed a man could love a woman. But I can't marry you, ever. It's not a matter of how we two feel about each other, please understand that. I can't forget what happened to my mother and father, and that will forever prevent me using his methods on you. And I can't take the chance that it means death or worse if you mate with a person of my peculiar genetic pattern. That's why Rascoe's scheme was doomed to unspeakable failure. My gene pattern is so absolutely different, that marriage with another person, genetically average, might produce horrors beyond conceiving—"

The girl laughed. At first he thought she was hysterical, but there was a relieved, happy note in it that alarmed him. The thought of insanity struggled for admission in his brain, and he fought it with seething fear in his heart.

"Jean, please—"

She was laughing and crying all at once. "Adam, you poor dumb brute! I'm of that genetic pattern, too! Your own pattern, Adam, don't you understand? My father and yours worked together, but your father made the mistake of overexposing himself and your mother. My father found that only a very brief period under the effect of the radiations was necessary for the same result. I know it sounds funny, but if you're a superman, I'm a supergirl! *Adam!* Don't squeeze so hard!"

"Why didn't you tell me, Jean?"

"You didn't," she replied with time-tested and indisputable logic, "ask me!"

The idyllic moments that followed were broken at last by the persistent clatter of the meteor detector. Both found their way to their seats and strapped themselves in. Adam took the controls. The automatic calculator and emergency pilot had not fired the ship out of the way of whatever had been detected, so it must have been of man-made symmetry.

The girl reached over and touched something and the picture of space on the screen faded. There was a blur of confused shadows, then a field of white took its place on the screen, only to have its blankness broken by a developing silhouette of a rocket. She touched the knob again and the rocket faded out in the same jumble of shadows, to be replaced by the sight of the star-sprinkled stretches before them.

The detector was a development of the capacity field burglar alarms of the twentieth century. When any extraneous object entered the immense range of the field the balance was offset, and the resistance rang an alarm. The televisor-'caster screen could be switched over to the system that registered the alarm, and the dimensions of the offending object determined by the extent of the field impinged upon.

"Patrol ship. The one thing this speedster won't outrun. And if we did outrun it, where would we go? Looks like we spend our honeymoon in confinement, Jean."

"Stinky!" The girl's face was flushed with suppressed excitement, and even in that moment Adam was impressed with how enchanting it made her look. "Why can't we run for my father's Ganymedian refuge? If we can get away from that ship, they'd never find us there."

Adam's lips tightened. "A good idea; if we could only shake that thing off some way—" His words trailed as he watched the meter register the narrowing distance between the two craft. One—two—three thousand—three and a half—four—five—round and round whirled his thoughts, like a squirrel on a revolving treadmill—round and round and round—

The girl looked up in surprise as Adam began swinging the ship back and forth, from one side to the other, slowing them perceptibly and apparently accomplishing no purpose. The red flash of a wave signal glowed on the board. Gravite ahead! The glaring harshness of the asteroid plunged out at them, and Adam dived straight for the rocket entrance, the patrol ship close behind him.

Whipping his hands over the controls, Adam gave a tremendous blast of fuel to the under and stern rockets, leveling the speedster, and rotated the ship so that they were hanging head downward in relation to Gravite.

He cut all power.

Centrifugal force reached out and squeezed them down into the chairs until it seemed that they must collapse in on themselves like one of the accordions used by the ancients back in the twentieth century, then the pressure

vanished, leaving them both gasping, as Adam flipped the ship back to its original position, and brought it out of the gigantic circle.

Jean understood then. Adam had simply let the terrific forward motion of the ship, in collaboration with the asteroid's weak gravity, swing him around like a stone in the sling David had used against Goliath. From the viewpoint of the police, Adam had rocketed down at the rocket entrance and vanished, leaving only one logical conclusion for them to follow.

Had not Adam turned the ship so that they literally sat on the centrifugal force rather than were pulled out by it, they would have been torn out of their straps.

The Test-Tube Man said, "They'll find out the trick soon enough—we'll have to get that police ship if we want to escape," and they plummeted down into the rocket entrance.

The air lock of the entrance hissed and the clamps caught them, slowing their speed this time so that they would emerge without danger; then Gravite popped out at them like a diamond unexpectedly exposed in a hard, ugly lump of clay.

The patrol ship was just a little larger than the speedster, and was built for speed and maneuverability, not appearance. The two patrolmen had spread out in their search, leaving their own ship exposed. Jean's rocket landed beside it, and she and Adam ran out and over to it, slamming the lock behind them, followed by indignant and futile howls of protest from the two patrolmen.

The controls in the ship were basically similar to those in the girl's speedster, only more of them and not so ornamental. The only real difference was the accelerator control which came up out of the floor, leaving the hands free. They secured themselves, and Adam hurled the vessel toward the rocket entrance, cutting in the view screen at the same time.

The picture flashed on the screen was one that burned forever into their memories. No nightmare could have the sheer horror of the discovery that an impenetrable shield had slid over the tunnel entrance and that they were blasting full speed into it.

Adam acted without conscious volition. His entire weight snapped down on the acceleration brake, and his fingernails snapped off short on the left nose blast buttons.

The ship banked over at an impossible angle, the seats creaking and groaning under the strain, their left gliding surface scraped metal hard, then the ship was diving toward the ground. Adam brought it level again, and collapsed back in his seat, covered with sweat.

The girl said shakily, "More good, clean, wholesome fun."

Adam got his breath back and told her, "When I incorporated the design for that shield in the original plans of this place, putting switches at every conceivable spot for its operation, I never dreamed that it'd be used against me like that."

"Where do we go from here?" asked Jean, changing the subject distastefully.

"There's only one other way to get out," Adam said, maneuvering the ship forward, "so I suppose we take it."

"Stands to reason. Do you mean the tube? It can be opened at the top to let us through—they've an arrangement for that in case of accident or for repairs on the car that can't be done in Gravite—and the draft would hold us level, but it's blocked by the tube car."

"It won't be," said Adam, "in a few moments." He flicked over the audition switch and shouted:

"Open up the tube up there and clear the way! I'm taking this rocket through the bore, so warn all levels to close their draft gates. Now—*clear the way.*"

He turned the amplification switch all the way up, and his voice boomed out over the city; only he spoke now in a quiet, intensely earnest tone, the sincerity of which even the distortion of magnification could not wholly conceal.

He said:

"To a world lost in effeminacy and forgotten glory, farewell. Some day, centuries hence, when our new strain has been tempered and found keen in the fire of hardship and struggle, our children's children's children will return, bringing with the will to conquer, the old careless courage, the indomitable initiative that now lies dormant. For then the degeneracy that is upon you will have run its course, and man will again look to the stars, and in his restlessness throw off the decadence of his ancestors. When that happens, when the human race again seeks the things without which it is nothing—beauty, achievement, adventure, and the true Utopia founded upon the quest for truth, upon the privation and sudden death of research and exploration—when it learns once more that man must fight or stagnate in complacent boredom, then the new man will return

to lead the race to the limitless potentialities that are its very justification for existence—the realization of which is the only omega that the spirit of man can ever truly know."

His voice died away as he cut the switch.

Silence then. Silence dream-deep with the proud promise of a far-off future, a new world, a new way of things, rising phoenixlike, bright and shining, from the decay of the old.

Finally:

"Do you know what the 'E' in my middle initial stands for?" asked Jean.

"No."

She smiled. "Eve."

"Whoops! Destiny, here we come!"

Adam kicked over the accelerator with his right foot. His arms were otherwise occupied at the moment.

THE END.

IN TIMES TO COME

As stated elsewhere in this issue, next month's magazine is going to be smaller—back to the old size. I'm sorry to change size at all; I'm even more regretful that the change must be made in the middle of a volume, and also in the middle of A. E. van Vogt's serial. As explained, the choice is not one of simple desire—it's simple necessity.

The smaller size magazine is going to be crowded-looking, too. We're using a smaller type face, with less space between lines, and encroaching on the margins of the pages as much as is mechanically feasible. Printing presses are high-precision tools—but newsprint is not a high-precision material. Allowance must be made for the stretch and shrink of the long roll of paper flying through the presses; if the margins are reduced too much, you'll be apt to start getting pages which teased—three quarters of a line on the page, the other quarter hanging somewhere in infinity.

So far as the story quality goes, that should hold up much better than the physical quality of the material object. We are gradually building up a group of new authors who can present the philosophy and the drama of those futures we are looking forward to, and do it well. Some of our old regulars will continue to write—though less often—as they find spare time. For the real, one hundred percent science-fiction author, it's as much of a relaxation to write a yarn as it is for the one hundred percent science-fiction reader to read it.

But from what I hear in letters from the men who are in the war now, there's going to be a sudden flood of more than top-notch yarns as soon as the nasty business of squashing Hitler, Tojo & Co. is done. The yarns they want to write now—and haven't the time. Will Stewart's got an idea about those Aliens of the seetee ship, and their inscriptions that talk—Heinlein wants to tell the story of the Blind Singer of the Spaceways; you may remember mention of some of his poems in Heinlein stories—E. E. Smith is working out the tremendous and intricate plot of the last of the Lensman series, a true explanation that Kinnison was never able to grasp—

THE EDITOR.

SPACE FIX

By R. S. Richardson

CONCLUDING *a two-part fact article on interplanetary astragation from the viewpoint of practical, commercial operation. Richardson presents the surprising picture of the Solar System as seen from a viewpoint of energy-distance—with Pluto the third nearest of the planets!*

One of the favorite devices for introducing the solar system to the uninitiated is by means of a broad plain on which divers fruit and vegetables are placed at the proper intervals to represent the Sun and planets.

On the scale generally adopted, the Sun is a large pumpkin or squash. Mercury thirty-six feet away is by tradition a small pea. Venus and the Earth are larger peas. The Moon nine inches from the Earth is a radish seed, although some authors favor mustard seed for the Moon. Jupiter a quarter of a mile away is an orange. Saturn a smaller orange, and Uranus and Neptune are plums at distances of a mile and a mile and one half. Pluto at two miles from the central pumpkin is still an uncertain quantity, but probably in the pea class with the Earth and Venus.

The writer first became aware of this model at about the age of twelve in one of Sir Robert Ball's numerous monographs on astronomy. Since then it has been turning up regularly in the popular star books about once or twice a year until now a pronounced allergy has been developed to these fruit-and-vegetable solar systems. There is something irritating about the smug assurance with which each author goes around depositing oranges and radish seeds over that two-thousand-acre field. (A ritual that would certainly cause anyone to be regarded with suspicion of lurking insanity if observed in the act). You wish somehow there wasn't such a finality about the whole performance. That just as the author was laying down the final pea for Pluto you could grab his arm and cry, "Your neat little solar system is all wrong! Uranus is closer to the Earth than Mercury and Pluto is not the farthest planet. Distance is more than merely a matter of miles!"

Anyone making such a ridiculous statement would undoubtedly be considered as of unsound mind himself, an intelligence unhinged possibly by the reading of too much science-fiction. Either that or else a visitor from the future to whom the remark that Pluto is the third nearest planet from the Earth would sound like the most natural thing in the world.

When we say that the town of A is twenty miles away and B is five miles, therefore B is

closer than A, we may be telling the biggest kind of a falsehood. The trouble is we have told only a part of the truth—the geometrical part. If the State has built a beautiful high-gear road to A while the taxpayers on the way to B have been neglected in this respect, then to all intents and purposes A is closer than B. Or perhaps the five miles to B goes through heavy traffic while A is relatively shunned by motorists. (This was written before gasoline rationing was in effect over the entire country.)

There is a convenient term which we might borrow from optics which is applicable here. This is the notion of "effective distance." If one beam of light goes through a dense flint prism and another through an equal length of air, the former is said to have the longer effective path. Once we begin to take account of obstacles to be overcome or the energy needed to get from place to place our whole scale of measurement calls for immediate revision.

Space engineers wrestling with the manifold problems of routing vessels throughout the solar system are going to be greatly concerned with energy changes or effective distances and comparatively little with linear changes or geometrical distances. In going from Planet P to Planet Q there are two fundamental factors to be considered: (1) the distance made good toward or away from the Sun; and (2), the relative mass and radius of the planets involved. These factors may combine in all sorts of ways that often lead to energy jumps as surprising as those of the Bohr atom in its heyday. But whereas the Bohr atom led a carefree existence, emitting and absorbing energy at will, a spaceship must reckon continually upon the course of future events. In order to see clearly how the ship's passage is affected by the energy conditions encountered, it is first necessary to get a picture of the solar system that is utterly different from any you have ever seen before. But remember that regardless of how weird it may look, it is just as true a representation in its way as the old pumpkin-radish-seed model. Fig. IX.

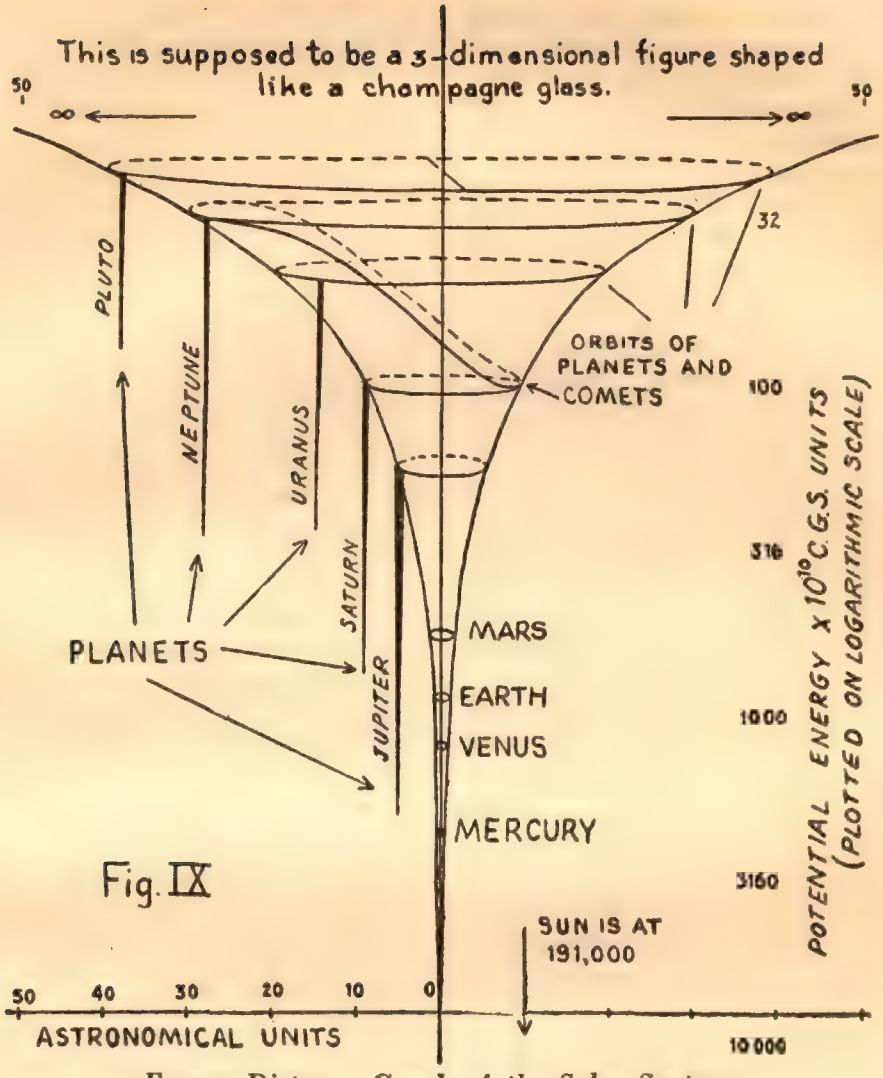
Imagine yourself to be an ant crawling over the outside surface of a vast trumpet-shaped structure one thousand feet tall. It stands upon its small end in an upright position—a highly unstable state of equilibrium. There is no danger of it toppling over or collapsing, however. It is only one foot wide at the base and extends upward without widening perceptibly almost to the very top. Then from nine hundred eighty-seven feet to one thousand feet it suddenly flares out all around like the stem of a champagne glass to a distance of forty-three hundred feet.

This trumpet-shaped structure is an Energy-Distance model of the solar system. It is not quite so easy to visualize as the one of flat concentric rings, but then there is no really valid reason why we cannot represent our solar system by an old-fashioned phonograph horn as well as a machine-gun sight. We must imagine also that we are constrained to move over the outside surface of this structure. This means that we are keeping within the plane of the solar system; we cannot drop above or below the plane in which the planets circulate.

The Sun is supposed to be located at the narrow foot of the model. Its width of one foot represents the diameter of the Sun on the scale we have chosen. Now consider the case of an ant near the Sun who wishes to move away from it; to move outward in space keeping within the plane of the solar system. Since he is restricted to the surface his only means of doing this is by climbing up the long, steep neck of the figure. Thus to go a very short distance horizontally the ant must do a tremendous lot of hard work climbing vertically. Eventually at the nine-hundred-eighty-seven-foot level he comes to a line drawn around the surface which bears an inscription. Slowly he spells it out letter by letter—ORBIT OF THE PLANET MERCURY. That is, the distance from the Sun to its first member when measured in terms of the energy needed to make the pull constitutes ninety-eight point seven percent of the whole system.

Feeling somewhat encouraged, the ant crawls up another six feet and finds a second line marked ORBIT OF THE PLANET VENUS. Two feet more brings it to the orbit of the Earth. The going is much easier now, for the surface is spreading rapidly outward so that to go from one orbit to another requires hardly any work at all. From Jupiter clear on out to the rim which marks the orbit of Pluto is a climb of but eleven inches.

Millions of ants for countless millions of years might crawl around over such a surface, notice vaguely that it was a lot harder to move over some portions than others, but feel no compulsion to investigate the matter farther. Until one day a certain ant would analyze the situation very minutely and as a result would announce that the intensity of



Energy-Distance Graph of the Solar System.

the force varied inversely as the square of the distance from the central vertical axis. This explained immediately why the force was so strong at the lower end where the figure was the slimmest and why it was scarcely perceptible at the upper flared end. Later another ant developed a theory in which the force was ascribed to the curvature of the space itself rather than an inherent property of the matter at the bottom of it.

On this model the orbits of the planets would be nearly circular rings around the extreme top portion, although the orbit of Mercury would dip slightly at one end. That is because most of the orbits are almost perfect circles and experience little change in energy from perihelion to aphelion, except for Mercury which is much more eccentric. The effect would be greatly exaggerated for a comet. At aphelion the orbit would be nearly circular like a planet's. As the comet nears the Sun its path would begin to drop sharply until the lowest point would be reached at perihelion. Then the comet would zoom up the other side of the column tracing out a path identical with the one going downward in reverse. A comet with an orbit approaching the parabolic like Halley's would go into a nose dive straight down the long stem and seem on the verge of shooting off the bottom. Then it would suddenly jerk back and fly upward at a slowly decreasing pace, leisurely swing around the top rim and almost—but not quite—make connection with its previous path.

The mass of a comet is so small that it may be disregarded entirely, reducing it to the same social level as the geometrical point, or mere locus in space. A planet, however, has an appreciable mass compared with the Sun,

and their case is not so easily set aside. It is hard to represent a planet on our model because they are in the nature of discontinuities in the smooth uniformity of the force field. The only reason why you must take a planet into account at all is because you can get so infernally close to them; right onto their surfaces, in fact. Now the force of surface attraction depends *directly* upon the mass of a planet —that is why Jupiter pulls so hard—and *inversely* upon its radius—which is why the tiny white dwarf stars have such incredible strength. Thus even a small planet at its surface can attract much more powerfully than the Sun at a distance of a few million miles. A timely analogy would be that of the lonely soldier pondering how best to spend his week-end leave. He is stirred by thought of the potent attractions of the big city far away, but decides in favor of the small town within easy thumbing distance of camp.

Although the Sun maintains the space around it in a state of tension that ranges from a steep gradient within the orbit of Mercury out to where it begins to level off beyond Jupiter, there are pockets within it—the planets—where local conditions are sharply reversed. On the Energy-Distance model a planet would appear as a sharp projection or knob depending upon its mass. Jupiter would be a long icicle hanging down almost to the orbit of Mercury. Saturn, Neptune and Uranus would be shorter icicles or stalactites. The Earth, Mars and Venus would be little more than pin points.

The captain of a spaceship approaching Jupiter would not begin to experience his attraction until within about a million miles or so of the surface. If for some reason he were unaware of the planet's presence, he would be amazed to find his instruments recording an abrupt reversal in gravitational intensity calculated for that region. He would undergo all the sensations of a man confidently strolling up the side of a hill who was unceremoniously precipitated into a hole in the ground.

The work required to leave the surface of Jupiter is sufficient to take a ship from the

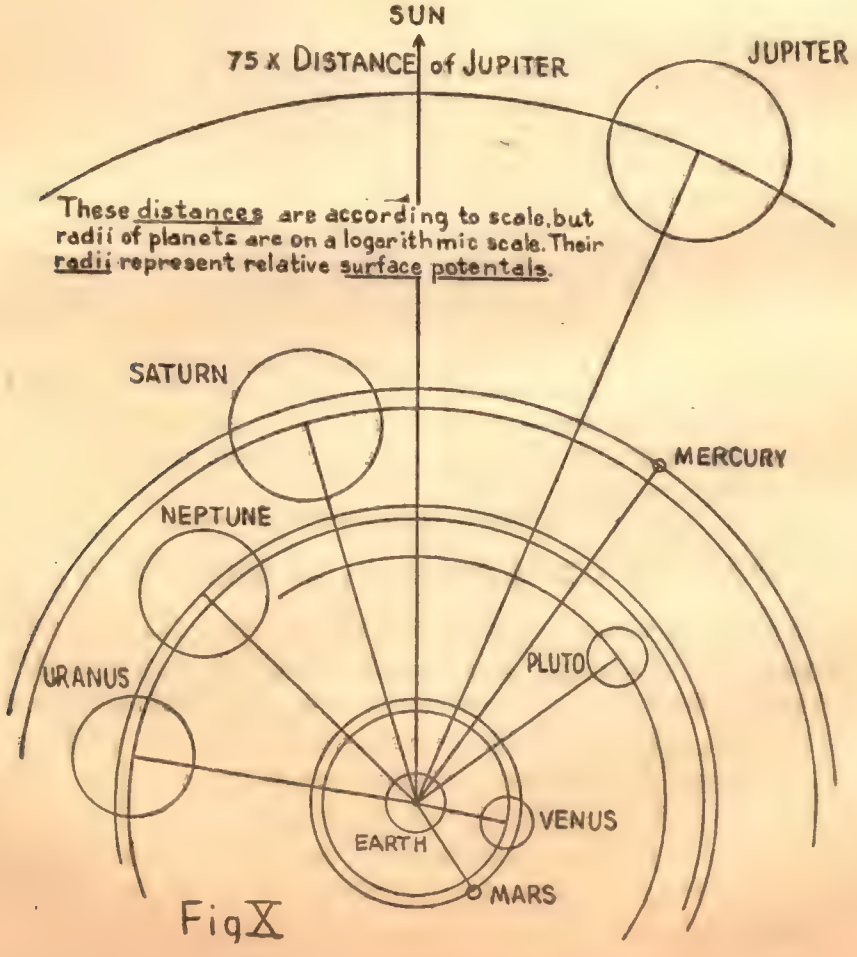


Fig X

orbit of Mercury to the orbit of Mars. Conversely, a ship that lands on Jupiter would have an equal quantity of work done upon it. (Here we again omit all discussion of practical landing operations.) If space travel can be done on the principle of the storage battery, so that when going downhill or in the direction of increasing gravitational attraction energy can be accumulated, a ship arriving upon Jupiter will be fairly bulging with power. But it does not represent any real gain because it will have to be used up again when the time comes to leave. It is like entering a country with a favorable rate of exchange. You are way ahead so long as you stay there, but your wallet flattens out as soon as you cross the border.

The huge mass of major planets makes it very doubtful whether they can ever be successfully colonized by beings like ourselves. Unless a cheap source of energy becomes available beyond any we can imagine at present—which may easily be the case—these mammoth hulks seem destined to be shunned forever owing to their inordinate *tenaciousness*. Woe to the skipper who allows his craft to drift within the hold of Jupiter! To approach and disembark is theoretically quite effortless; all done at Jove's personal expense, in fact. But the traveler soon finds to his dismay that he is fast within a gravitational prison from which escape is possible only by paying an exorbitant ransom. It is one of those easy-to-get-into, hard-to-get-out-of propositions, like promising to make a speech or meet a payment months in advance.

This must not be taken to signify that space travel is going to be limited by the orbit of Mars. Jupiter, Saturn, and Neptune all have satellites as large as the Moon or Mercury within moderate energy distances. For the inverse square part of Newton's law works both ways; it makes the force-field build up rapidly near a body and also peter out rapidly a few diameters away. Ideal landing fields will undoubtedly be found on Jup III and Jup IV, which according to the latest estimates are a trifle larger than Mercury and so far from Jupiter that his attraction would be a minor consideration.

Saturn, Neptune, and Uranus are curious examples of massive bodies with feeble surface attractions. They are emasculated, so to speak, because they are unable to make effective use of the matter with which they are endowed. A planet behaves much as if it were a ball-bearing surrounded by a film of soap bubble. It attracts at the surface as if its mass were all concentrated at the center. Saturn has eighty-three percent of Jupiter's girth but only thirty-three percent of his mass. Result is that Saturn attracts on the surface scarcely more than Earth. But shrink Saturn down by twelve thousand miles—get twelve thousand miles closer to him—and his surface gravity will promptly equal that of Jupiter's.

It produces a queer feeling to think that we could walk around over Saturn with little more exertion than on the Earth. Yet Saturn is one of the most powerful disturbing objects in the solar system affecting the motions of Neptune and Jupiter while the Earth can barely produce a tremor as close as Mars or Venus. Which is one for you to figure out.

Our planet is rather exceptional in that its surface gravity is fairly large, perhaps unduly so compared to the muscular development of its inhabitants. The dinosaurs, for example, were forced out of the race entirely because their size and strength were so out of propor-

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CONCERNING LATE DELIVERIES OF ASTOUNDING—

If Astounding is late on your newsstand, the reason is almost certain to be difficulties of shipment. The American railroad system is doing an "impossible" job in moving the enormous volumes of freight called for by war shipments, plus the burdens transferred to it by the withdrawal of coastal shipping. If a shipment of dural sheets is needed by Lockheed Aircraft, a carload of Astoundings is apt to spend a week or two on a siding, and the West Coast readers will have to wait. Any objections to that arrangement can be taken up with Herr Schickelgruber, Signor Mussolini, and that Son of the Sun, Hirohito.

tion to their weight. Which might cause one with a bent for ecology to toy with the idea that maybe we are not natives of the Earth at all but creatures originally spawned from some other world of lesser gravitational power. In short, that we need not continue wondering what the Martians are like because we are the descendants of pre-historic Martian invaders!

Leaving such highly speculative material for those at the top of the Table of Contents, it may be questioned whether the net energy difference in a transition from planet to planet is the factor of main importance. There can be no argument that in going uphill from an inner orbit to an outer orbit energy will have to be expended in the climb. But when work is being done *on* a ship as in the drop-down to an inner orbit or surface of a planet, energy will still have to be used in order to cushion the fall. Otherwise a ship would arrive on Jupiter at the rate of around one hundred forty thousand miles an hour.

An engineer planning a trip, therefore, would probably make a more accurate estimate if he takes into account the *total* energy involved regardless of which way it is acting. This is plain common sense and agrees with our everyday experience. Thus any astronomer at Mount Wilson can testify that the strain on the leg muscles is the same whether they are used in pulling yourself up the twenty miles to the Observatory, or in bracing yourself on the way down.

On the basis of the total needed to reach a planet's surface from the Earth—energy from orbit-to-orbit and from surface-to-surface—the solar system presents such a scrambled appearance that the familiar old astronomer with his fruit and vegetables would never recognize it in a lifetime. Here are the distances to the various members in terms of the distance to Venus, which maintains its position as our nearest neighbor:

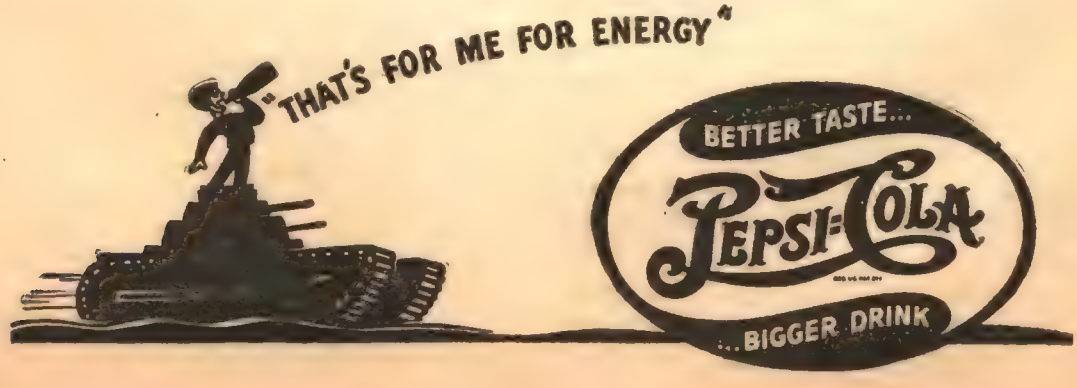
EFFECTIVE OR ENERGY DISTANCES TO THE PLANETS

1.	EARTH TO VENUS	....	1.00
2.	" " MARS	....	1.02
3.	" " PLUTO	....	2.50
4.	" " URANUS	....	2.91
5.	" " NEPTUNE	....	3.91
6.	" " SATURN	....	4.00
7.	" " MERCURY	....	4.19
8.	" " JUPITER	....	7.11
9.	" " SUN	....	543

Thus by taking what the mathematician would call the absolute sum of the energy distances to the planets, Pluto becomes a comparatively close object while Mercury is removed to the border of the system. Notice also that the planets fall into rather distinct groups: (1), Venus and Mars; (2), Pluto, Uranus, and Neptune; (3), Saturn and Mercury; (4), Jupiter and his satellite system.

Other solar systems might be devised even more outlandish than the Energy-Distance Model, yet be just as true a representation as one can readily visualize. Come to think of it, an astronomer's life is devoted chiefly to sifting illusion from reality. Trying to find where things really belong in this universe. Mars may be forty million miles away but it is springtime on the Syrtis Major right now.

THE END.



ABDICATION

By E. M. Hull

JIM RAND *had made his pile out in the stars at the frontier of the Galaxy. He was going home, back to Earth and retirement and marriage. He was, that is, till somebody started trying to push him there—*

Illustrated by Kramer

The big man came aboard the space liner from one of the obscure planets in that group of stars known as the Ridge.

The Ridge is not visible as such from Earth. It lies well to the "upper" edge of the Milky Way; and the long, jerky line of stars that compose it point *at* Earth, thus showing as a little, bright cluster in an Earth telescope. Seen from Kidgeon's Blackness, far to the right, the Ridge stands out beautifully clear, one of the more easily distinguishable guide-marks in our Galaxy.

The area is not well serviced. Once a week an interstellar liner flashes down the row of stars, stopping off according to advance notices received from its agents on the several score little-known planets. On reaching the edge of the Ridge, the ship heads for the central communication center, Dilbau III, where transfer is made to the great ships that traffic to distant Earth.

The entire trip requires about three weeks; and anyone, who moved around as much as I did, soon learned that the most interesting part of the journey is watching the passengers who get on and off at the way ports.

That's how I came to see the big man as soon as I did.

Even before he came aboard from the surface craft that had flashed up to where we lay about a hundred thousand miles above the planet, I could see that the new passenger was *somebody*.

It was his luggage, case after case of it being hoisted by the cranes, which gave that information. Beside me, a ship's officer gasped to a fellow officer:

"Good heavens, that's ninety tons of the stuff so far!"

That made me straighten up with interest. They don't allow freight on these liners; and ninety tons makes up a lot of personal belongings. The officer spoke again:

"It's the permanent move, looks like to me. Somebody's made his pile, and he's going home to Earth. Look! It's Jim Rand."

It was.

I have a little theory of my own about legendary men of space like Jim Rand. It's their

reputations that enable them to accomplish their greatest and most widely publicized coups.

Initial momentum is necessary, naturally, and boundless energy and courage, but that only makes millions. It's reputation that pushes such men into the billion stellor class.

Jim Rand's deep, familiar voice broke my reverie: "Hello, there," he said. "I believe I know you, but I can't place you."

He had stopped a few feet from where I stood, and was staring at me.

He was a man of about fifty, with a small mustache, and a nose that looked as if it had been broken, and then repaired under emergency conditions. That slight twist in it didn't hurt his looks any, rather it added a curious strength to the muscular lines of his face. His eyes were blue-green, bright now with puzzlement.

I knew exactly how he was feeling. People whom I've met, and meet again later, always wonder whether or not they know me; and sometimes they become very exasperated with their memories. It's up to me, then, to recall the occasion. Sometimes, I do that; sometimes I don't.

I said now: "Yes, Mr. Rand, I was introduced to you by a mutual friend when you were organizing the Wild Mines of Guurdu. Your mind was probably on more weighty matters at the time. My name is Delton—Chris Delton."

His gaze was curiously steady. "Maybe," he said finally. "But I don't think I'd forget a man of your appearance."

I shrugged. They always say that. I saw that his face was clearing.

"Will you meet me in the lounge in about an hour?" he said. "Perhaps we can talk."

I nodded. "Happy to."

I watched him walk off along the brilliantly lighted corridor, redcaps wheeling several trunks and bags after his tall, powerful form.

He did not look back.

Beneath my feet I could feel the shudder of engines. The great ship was getting under way.

"Yes," said Jim Rand an hour and a half later, "I'm through, I'm retiring, quitting for good. No more wildcat stuff. I've bought an estate; I'm going to get married, have some children and settle down."

We were sitting in the lounge, and we had become more friendly than I had thought possible. The great, glittering room was practically deserted, nearly everybody having answered the first call for dinner.

I said: "I don't wish to seem a cynic, but you know the old story: All this out here, these untamed planets, the measureless wealth, the dark vastness of space itself—it's supposed to get into a man's blood."

I finished as coolly as I could: "Actually, the most important thing in your life at the moment *is* that at least two, possibly four, men have been watching you for the past three minutes."

"Yes," said Jim Rand. "I know. They've been there since we came in."

"Do you know them?"

"Never saw them before in my life." He shrugged. "And I don't give a damn either. Five years ago, even last year, I might have got myself excited about the possibilities. Not now. I'm through. My mind *is* made up. I've laid my plans."

He settled back in the lounge chair, a big, alert man, smiling at me with a faint, amused expression in his eyes.

"I'm glad you were aboard," he said, "though I still can't remember our last meeting. It would have been boring alone with all these little minds."

He waved a great hand with a generous gesture that took in half the ship. I couldn't suppress a smile. I said:

"Boredom—there'll be plenty of that on Earth for a man of action. The place is closed in by the damnedest laws—all kinds of queer regulations about not carrying energy guns—and if anybody bothers you, or starts trouble, you've got to settle it in court. Why, do you know, they sentence you to jail simply for owning an invisibility suit?"

Rand smiled lazily. "That won't bother me. I gave all mine away."

I stared at him, frowning. "You know," I said finally, "I've found that trouble never asks whether it's welcome or not. Don't look now, but somebody's just got out of the elevator, and is coming toward you."

I finished: "If you need any help, just call on me."

"Thank you," said Jim Rand. He smiled his lazy smile, but I could see the gathering alertness in him. "I usually handle my own trouble."

It was I who had the vantage point. I was facing the elevator. Rand was sitting side-

wise to it; and, superb actor that he was, he did not deign to glance around, or so much as flick an eyelash.

I studied the stranger who was approaching, without looking at him directly. His eyes, I saw, were dark in color, rather close-set behind a long, thin nose. It was a wolfish face thus set off, with thin, cruel lips and a receding chin that yet gave no suggestion of weakness. The man eased his lank body into the lounge beside Rand.

Ignoring me, he said: "We might as well understand each other."

If Rand was startled by that, there was no indication on his face. He smiled, then pursed his lips.

"By all means," he said. "Misunderstandings are bad, bad."

He clicked his tongue sadly, as if the memory of past misunderstandings and resultant tragedies was passing through his mind. It was magnificently done, and I could not restrain a thrill of admiration.

"You are meddling in something which is no business of yours."

Rand nodded thoughtfully to that, and I could see that the movement was more than an actor's gesture. It must be occurring to him by now that he had better put some thought to such an open threat.

His voice was light, however, as he said: "Now, there, you have touched on one of my pet subjects—business ethics."

The man's dark-brown eyes flamed. He spat his words: "We have already been compelled to kill three men. I am sure, *Mr.* Blord, you would not want to be the fourth."

That startled Rand. His eyes widened; and there was no doubt that he was shocked at the discovery that he was being mistaken for someone else, particularly *that* someone.

I don't know whether I'm qualified to speak about Artur Blord. He's simply one of several dozen similar types of men who made the Ridge their stamping ground. Cities spring up where the heavy hand of their money points. And that brings more money, which they concentrate elsewhere.

Blord differed from the others only in that he was a mystery, and few people had ever seen him. For some reason, this added to his reputation, so much so that I have heard people speak about him in hushed whispers.

The shock faded from Rand's face. His eyes narrowed. He said coldly:

"If there must be a fourth dead man, I assure you it won't be me."

The wolf-faced man actually changed color. That's what reputation can do. He said hastily, his tone conciliatory:

"There's no reason for us to be fighting. There're nine of us now, all good men that even you, Blord, cannot afford to antagonize. I should have known I couldn't scare you. Here's our real proposition:

"We'll give you ten million stellors, payable in cash, *within an hour*, provided you sign an agreement stating that you will NOT get off this ship tomorrow at Zand."

He leaned back. "Now, isn't that a fair and square offer?"

"Perfectly," said Rand, emphatically, "perfectly fair."

"Then you'll do it!"

"No!" said Jim Rand. And moved his right arm about a foot. It was a long distance for that powerful arm to gather momentum; and its effect was comparatively devastating.

"I don't like," said Jim Rand, "people who threaten me."

The man was moaning, clutching at his broken nose. He stumbled blindly to his feet and headed for the elevator. His four companions gathered around him, and they all vanished into the glistening interior.

As soon as the elevator door closed, Rand whirled on me. "Did you get that?" he said. "Blord! Artur Blord is mixed up in this. Do you realize what it could mean? He's the biggest operator on this side of Dilbau III. He's got a technique for using other men that's absolutely the last word. I've always wanted to stack up against him but—"

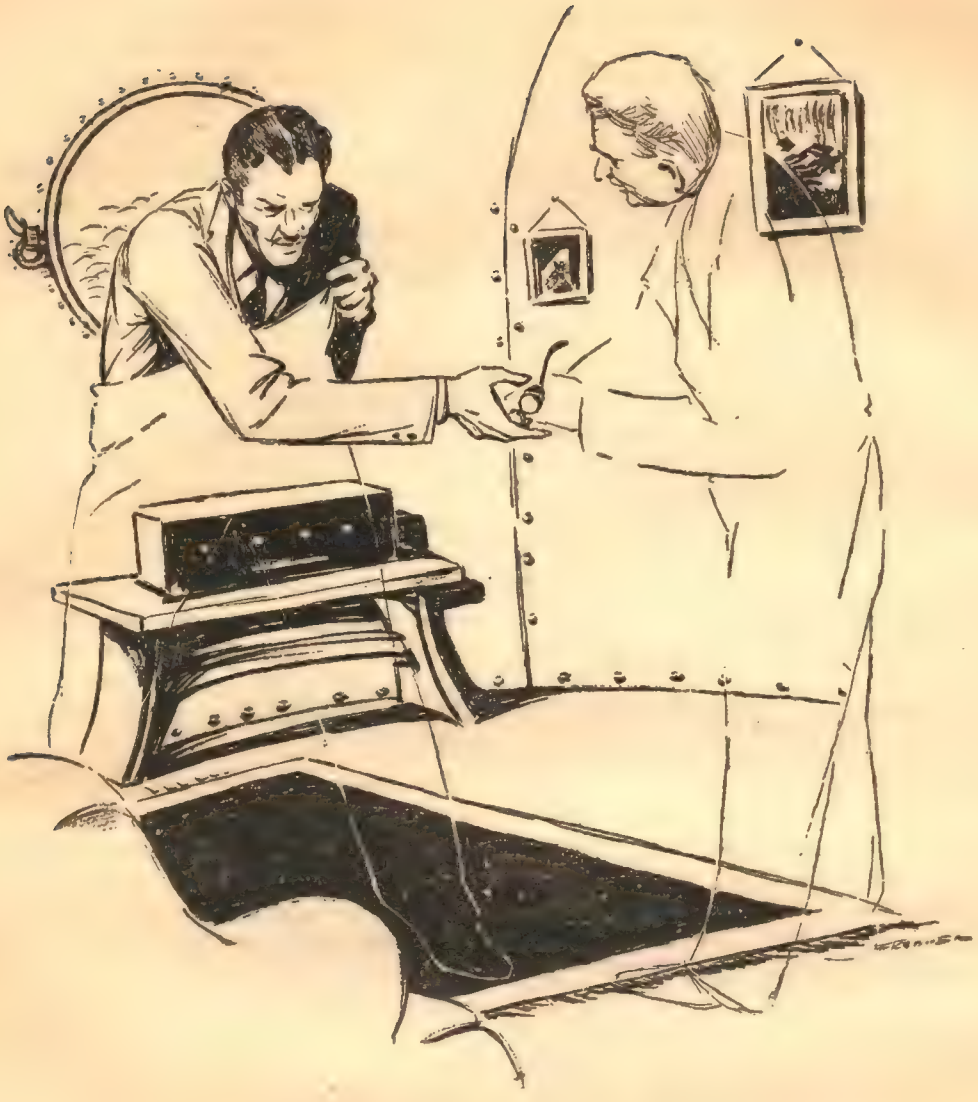
He stopped, then hissed: "Wait here!"

He walked swiftly toward the elevator, stood for a moment staring at the floor indicator of the machine the others had taken, then climbed into the adjoining lift. Ten minutes later, he settled softly in the seat he had left.

"Have you ever seen a wounded nid?" he said exultantly. "It heads straight for home without regard to the trail it may leave."

There was bright fire in his gaze, as he went on briskly: "The chap whom I hit is called Tansey; and he and his gang have taken Apartments 300-308. The outfit must be new to the Ridge stars. Proof is they mistook a person as well known as I am for Blord. They—"

Rand stopped short there. He looked at me sharply. "What's the matter?"



"I'm thinking," said I, "of a man who's retiring; his plans are all made, estate, wife, children—"

"Oh!" said Jim Rand.

The glow faded from his eyes. Some of the life went out of him. He sat very still frowning; and I didn't have to be a mind reader to see the struggle that was taking place in his mind.

At last, he laughed ruefully, "I *am* through," he said. "It's true I forgot myself for a moment, but I must expect occasional lapses. My will remains unalterable."

He paused; then: "Will you have dinner with me?"

I said: "I had dinner served in my apartment before I came to meet you."

"Well, then," he persisted, "how about coming up to my rooms a couple of hours from now?" He smiled. "I can see you're skeptical about me, and so you may be interested in proof that I'm really in earnest. I've got the presidential suite, by the way. Will you come?"

"Why, sure," I said. I sat watching him walk off toward the dining room.

It was half-past eight—all these stellar ships are operated on Earth time—when Rand opened the door for me, and led me into his living room. The whole room was littered with three-dimensional maps, each in its long case; and I was familiar enough with the topography that was visible to recognize the planet Zand II.

Rand looked at me quickly, laughed and said: "Don't get any wrong ideas. I'm not

planning anything. I'm merely curious about the situation on Zand."

I looked at him carefully. He had seated himself; and he seemed at ease, casual, without a real worry in him. I said, finally:

"I wouldn't dismiss the matter as readily as that. Remember, you didn't invite their attention in the first place; they're not liable to wait for future invitations either."

Rand waved an impatient arm. "To hell with them. They'll be off the ship in fifteen hours."

I said slowly: "You may not realize it, but your position in relation to such men is different than it's ever been. For the first time in your existence, you're thinking in terms of your personal future.

"In the past, death was an incident, and, if necessary you were ready to accept it. Wasn't that the general philosophy?"

Rand was scowling: "What are you getting at?"

"You can't afford to take any chances. I'm going to suggest that I go to Apartment 300, and tell them who you are."

Rand's gaze was suspicious. "Are you kidding?" he said. "Do you think I'm going to eat dirt for a bunch of cheap crooks? If I have to handle them, I'll do it my way."

He shrugged. "But never mind. I can see you mean well. Take a look at this, will you?"

He indicated one of the long map plates, on which showed a section of the third continent of the planet Zand II. His finger touched a curling tongue of land that jutted into the Sea of Iss. I nodded questioningly, and he went on:

"Last time I was on Zand, they were building a city there. It was mostly tents, with a population of about a hundred thousand, about three hundred murders a week, and atomic engineering was just coming in. That was six years ago."

"I was there last year," I said. "The population then was a million. There were twenty-seven skyscrapers of fifty to a hundred stories, and everything was built of the indestructible plastics. The city is called Grenville after—"

Rand cut me off grimly. "I know him. He used to work for me, and I had a run-in with him when I was on Zand. Had to leave fast at the time because I was busy elsewhere, and because he had the power."

A thoughtful frown creased his face. "I always intended to go back."

I nodded. "I know. Unfinished business."

He started to nod to that. And then he sat up and stared at me. I was absolutely amazed at the passion that flared in his voice, as he raged:

"If I went around fishing up all the business I've started, and paying off all the ingrates, I'd still be here a thousand years from now."

His anger faded. He looked at me sheepishly. "I beg your pardon."

There was silence. Finally, Rand mused: "So there're a million people there now. Where the devil do they all come from?"

"Not on these liners," I said. "It's too expensive. They come packed into small freighters, men and women crowded together in the same rooms."

Rand nodded. "I'd almost forgotten. That's the way I came. You'd think it was romantic to hear some people talk. It's not. I've had my skinful of frontier stuff. I'm settling in one of the garden cities of Earth in a fifteen-million-stellor palace with a wife that will—"

He broke off. His eyes lighted. "That's what I want to show you," he said. "My future home, my future wife."

Rand led the way into the second sitting room—the lady's sitting room, it's called in the circulars—and I saw with surprise that he had had a screen fitted up against a wall and there was a compact projector standing on the table.

Rand switched off the lights and turned on the projector. A picture flashed on the screen, the picture of a palatial house.

The first look made me whistle. I couldn't help it. They say that men don't dream of homes, but if ever anything looked like a dream come alive, this was it. There was a flow in the design, and a sense of space. I can't just describe that. The mansion actually looked smaller than it was; it seemed like a jewel in its garden setting, a white jewel glittering in the sun.

There was a click; the picture faded from the screen, and Rand said slowly:

"That's the house, built, paid for, fully staffed. Am I committed, or am I not?"

In the half darkness, I said: "It can't possibly cost more than a million stellors a year to maintain. Say, another million to operate a space yacht and to cover the overhead of watching your holdings. Your share of the

Guurdu Mines alone will pay for it all ten times over."

A light blinked on; and I saw that Rand was glaring at me. "You're hard to convince," he said.

"I know the hold," I said, "that the Ridge stars get on a man."

He leaned back, relaxing. "All right, I'll admit everything you say. But I'm going to show you something now that you can't set up against a money value."

He reached toward a table on which lay some X-ray plates. I had noticed them before. Now, Rand picked up the top one and handed it to me. It was of a woman's spine. Beside it, on the plate was written in some species of white ink:

DEAR JIM:

The most perfect spine I have ever seen in a woman. When you consider that her I. Q. is 140, the answer is: don't let her get away. With the right father, her children will all be super.

KARN GRAYSON, M. D.

"Is that the woman?" I asked.

"That's she." I could see that he was looking at me sharply, studying my face. "I've got more plates here, but I'm not going to show them to you. They simply prove that she's physically perfect. I've never met her personally, of course. My agents advertised discreetly, and among all the trashy women who answered was this marvel."

In my life, in conversation with strong men, I've never been anything but frank. "I'm wondering," I said steadily, "about the kind of woman who sends her specification like a prize animal."

"I wondered about that, too," said Jim Rand. "But I'll show you."

He did.

There will always be women like Gady Mellerton, I suppose, but not many. They're scattered here and there through time and space; and each time the mold is destroyed, and must be painstakingly re-created. Invariably, they know their worth, and have no intention of wasting themselves on little men.

On the screen, she seemed tall, about five feet six, I judged. She had dark hair and—distinction. That was the essence of her appearance. She looked the way a queen ought to look and never does.

Her voice, when she spoke, was a golden, vibrant music:

"All I've seen of you, Jim Rand, is a picture your agent gave me. I like your face. It's strong, determined; where you are you're a man among men. And you don't look dissipated. I like that, too.

"I don't like being up here, parading myself like a show horse. I don't like those X rays that I had to have taken, but even in that I can appreciate that, far away as you are, you must set up standards and judge by them. I'm supposed to describe my life, and I like that least of all."

Click! Rand cut off the voice, leaving the picture. "I'll tell you the rest," he said.

He told me about her, as I sat there unable to unloose my gaze from the screen.

"She's a multi-operator. That's one of those damn jobs out of which you can't save any money. I don't mean that the salary isn't good. But they grab a piece out of it for old age insurance, for sickness, for compulsory holidays, and so much for clothes a year, so much for housing, entertainment. You've got to live up to your income. You know the kind of stuff.

"For the people as a whole, it's paradise, a dream come true, but the only way a woman can break out of it is to marry somebody. Actually, when a first-rater gets caught in one of those perfect jobs, she's sunk. It's the purest form of slavery. It's hell with a capital H. Can't you just picture it?"

I said nothing. I sat there looking at the woman on the screen. She was about twenty-five; and I could picture her going to and from work, on her holidays, swimming. I could picture the beautiful children she would have.

I grew aware that Rand was pacing the floor. He seemed to realize my unqualified approval, for he was like a little boy who has shown off a new, remarkable toy. He glowed. He grinned at me. He rubbed his hands together.

"Isn't she wonderful?" he said. *"Isn't she?"*

I said at last, slowly: "So wonderful that you can't afford to take any chances with her future. So wonderful that I'm going to loan you an invisibility suit, and you're going to sleep on the floor tonight."

Rand paused in his pacing, confronted me. "There you go again," he scoffed. "What do you think I am, a little sissy? I'm not hiding from anybody."

His arrogance silenced me. If I had been asked at that moment whether Jim Rand was

heading straight for Earth, my answer would have been an unqualified "yes."

It was an hour later when we separated, and nearly two hours after that when my doorbell sounded. I answered at once. Jim Rand stood there.

He looked startled when he saw that I was fully dressed. "I thought you'd be in bed," he said, as I shut the door after him.

"What's the matter?" I asked. "Anything happen?"

"Not exactly." He spoke slowly, and he did not look straight at me. "But after I went to bed I realized that I'd been very foolish."

My mind leaped instantly to the girl, Gady Mellerton. "You mean," I said sharply, "you're not going to Earth?"

"Don't be silly." His tone was irritable. He sank into a chair. "Damn you, Delton, you've been a bad influence on me. Your crass assumption that I'm lost if I deviate in the slightest degree from my purpose actually had me leaning over backward, suppressing all my normal impulses, my natural curiosity, even my mental approach to the subject. That's over with. There's only one way to deal with their type of person."

I offered him a cigarette. "What are you going to do?"

"I'd like to borrow that invisibility suit you mentioned."

I brought the two suits out without a word, and offered him the larger. "We're much of a height," I said, "but you swell out more around the shoulders and chest. I've always used the big one when I'm carrying equipment."

I saw his gaze on me oddly, as I pulled the second suit over my clothes. "Where do you think you're going?" he said coolly.

"You're heading for Apartments 300-308, aren't you?"

"That's right but—"

"I feel sort of responsible for you," I said. "I'm not going to let that girl be stuck in her job, or be forced to marry some tenth-rater because you get killed at the last minute."

Rand grinned boyishly. "You sort of like her looks, eh? O. K., you can come along."

Just before he put on his headpiece, I brought out the glasses. I said: "We might as well be able to see each other."

For the first time, then, since we had met, I saw Jim Rand change color. He stood for a moment as if paralyzed; and then his hand reached gently forth and took the glasses. He stood there with them in his fingers, staring as at a priceless gem.

"Man!" he whispered finally, "man, where did you get these? I've been trying for fifteen years to get hold of a pair."

"There was a shipment," I said, "of five dozen to the patrol police on Chaikop. Four dozen and twelve thousand stellors arrived. I figured they were worth a thousand apiece."

"I'll give you," Rand said tensely, "ten million stellors for this pair."

I could not for the life of me suppress a burst of laughter. He scowled at me, snapped finally:

"All right, all right, I can see you won't sell. And besides you're right. What the devil does a family man want with them on Earth anyway!" He broke off. "How well can you see with them?"

"Pretty good. Help me switch on the lights. That'll give you a better idea."

It's really startling how little is known about invisibility suits. They were invented around 2180, and were almost immediately put under government control.

Almost immediately. It was soon evident that someone else was manufacturing them secretly, and selling them at enormous prices. The traffic was eventually suppressed on all the major planets, but it followed the ever receding starry frontiers, its sale finally limited by a single fact:

Only one man in a hundred thousand was willing to pay the half million stellors asked for an illegal suit.

The cost of manufacture, I have been told, is three hundred stellors.

Try and suppress that kind of profit. Fifty years have shown that it can't be done.

The strangest thing about the suits is that they work best in bright sunlight. Come twilight, or even a dark cloud, and the wearer takes on a shadowy appearance. In half darkness, a suit is practically worthless.

When the power is switched off, an invisibility suit looks like a certain type of overalls extensively used for rough work. It takes a very keen eye to detect the countless little dark points of—not cloth—that make up the entire surface.

Each one of these points is a tiny cell which, when activated, begins to absorb light. The moment this occurs the cell goes wild. The more light turned on it, the wilder it becomes.

The limiting factor is the amount of light that is available.

That was why I had the lights switched on in my apartment, so that Jim Rand could look at me under conditions where, without the glasses, I would have been completely invisible to him.

It was day-bright in the big hallway, too. These enormous ships always try to give the impression of sunniness even in deepest space. It's supposed to be good psychology. No one with an invisibility suit could ask for a better light.

As I closed the door of my suite, I could see Rand just ahead of me, a shimmering shape. His suit glittered as he walked, and took on strange, shining light-forms. It blazed with shifting points of color, like ten thousand diamonds coruscating under a brilliant sun.

It was the sleeping hour; and the long corridors were empty. Once, a ship-officer passed us, but both Rand and I were accustomed to the curious sensation of watching a man walk by with unseeing eyes.

We reached Apartment 300. I used my key of ten million locks—and we were in. All the lights were on inside, and a man lay on the living-room floor, very still. It was one of the men who had been watching Rand in the ship's lounge. Not the leader, Tansey.

Automatically, Rand floated off like a god of light into the bedroom. I headed for the bathroom, then the spaceroom. When I came back, Rand was kneeling beside the man.

"Been dead," he whispered to me, "about an hour."

He began to go through the fellow's pockets, pulling out papers. That was where I stepped forward, and put a restraining hand on his wrist.

"Rand," I whispered, "do you realize what you're doing?"

"Eh?" He looked up at me. His face showed as a blurred pool of light, but even in spite of that I could see the surprise in it. "What the devil do you mean?"

"Don't look any further," I said. "Don't try to find out any more."

His low laughter mocked me. "Man, are you harping on that again? For all I know, in a minute I'll find out from these papers what this is about."

"But don't you see," I said earnestly. "*Don't you* see—it doesn't matter what it is. It's simply another big Ridge deal; it can't be *more* than that. You know that. There have been thousands like it; there'll be millions more.

"It may be a new city; it may be mining, or any one of a dozen other things. *It doesn't matter.*

"Here's your test. You can't leave half your soul on the Ridge and take half with you. For you, it's all or nothing. I know your type. You'll always be coming back, ruining your life and hers.

"But if you can stop yourself now, this minute, this second, and go out of here, and dismiss the whole affair from your mind—"

He had been listening like a man spellbound. Now, he cut me off brutally:

"Are you crazy? Why, I'll lie awake nights from sheer curiosity if I don't find out what this is, now that I've been dragged into it."

His voice took on an arrogant note: "And suppose I do get off at Zand tomorrow, and stay for a few weeks. Am I a slave to the idea of retirement? It was never my intention to be anything but free to act as I pleased. I—"

"*Ssshh!*" I said. "Here comes somebody."

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Rand stood up in a leisurely fashion, the true sign of the experienced invisible man. No quick movements! Soundless action. We stepped back from the body as near the door as possible.

It was in such moments that the glasses were priceless. Ordinarily, in a crisis, two invisible men working together are a grave danger to each other's movements.

The door opened, and four men came in, the last of them being Tansey. He had a white bandage on his nose.

"Price was a damned fool," he said coldly. "He should have known better than to try to murder a fellow like that. Just because we received the eldogram from Grenville telling us that he'd never sent that other message, he—"

Another man cut him off: "The important thing is to slip him into this invisibility suit and dump him through the refuse lock."

They trooped out into the empty corridors, carrying their invisible burden.

When they had gone, Rand said slowly, grimly: "So Grenville's in on this—"

I stood at the great entrance lock, watching the ship cranes load Rand's baggage onto the surface craft that had soared up from Zand II.

The planet rolled below, a misty ball of vaguely seen continents and seas, a young, green, gorgeous world.

Rand came over and shook my hand, a big man with a strong, fine face. I couldn't help noticing the way his hair was graying at the temples.

"I've eldogrammed Gady," he said, "that I'll be there in two or three weeks."

He saw the look on my face, and laughed. "You must admit," he said, "that the opportunity is one that I can't afford to miss."

"Don't kid me," I said, "you don't even know what it's all about."

"I will," he said, smiling. "I will."

I knew that.

His last words to me were: "Thanks for the loan of the suit and glasses. That cuts you in for twenty-five percent of anything I make."

I said: "I'll see that my agents contact you."

I watched his big form move off through the lock. Steel doors clanged between us.

As soon as the ship started to move, I went to the purser's office. He looked surprised.

"Why, Mr. Delton," he said, "I thought you were leaving us at Zand."

"I changed my mind," I said. "Book me through to Earth, will you?"

That was three years ago.

My wife is looking over my shoulders as I write this. "You can at least," she says, "explain."

It's really very simple. When I saw Rand come aboard, I eldogrammed my agent on Zand II. He sent a message to Tansey, purporting to come from Grenville, describing Rand, and stating that the man of that description was Artur Blord, who, the eldogram said, must be prevented from landing.

Rand reacted the way I expected. The only thing was, when I saw the girl, I changed my mind. I had my agent wire Tansey that a mistake had been made and that Rand was —Rand.

Tansey grew suspicious, and wired Grenville, who disclaimed all knowledge of the previous eldograms. At this point Price came to my suite to kill me. I used the large invisibility suit to cart his body to Apartment 300; and it was still lying there when Rand and I entered.

The reason I interfered in the first place with Rand's purpose of retiring was because I wanted to use him to force my interest into the tremendous uranium find that had been made on Zand. I've found that I become bored with the actual details of organizing a great mining development, and I do it only when I can't find a man to whom such details are life's blood. A man who will moreover let me buy in in some fashion.

Naturally, I used my knowledge of the psychology of spacemen. It's clear to me now that, once those kind of forces are set in motion, they can't be stopped.

I looked up at my wife. "Well, Gady," I said, "will that do?"

"Except that like a good sport, Mr. Rand sold us the house."

Gady has insisted on calling our first-born by my full name: Artur Christopher Blord Delton.

You see, Rand convinced me. A man has to retire sometime.

THE END.

TYRANNOSAURUS WAS NO KILLER

By Willy Ley

THE mighty hunter, the Tyrant-Lizard of the age of Dinosaurs, the most terribly armed carnivore of all the ages—wasn't at all the creature we've imagined. In this article, Ley shows what later information tells of the "Tyrant" who was no ruler.

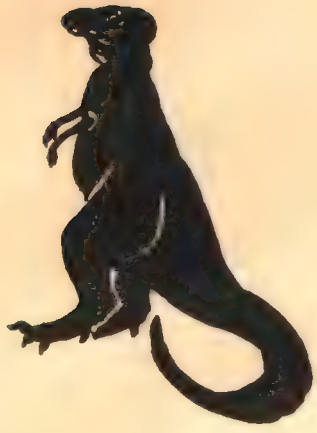
Illustrated by Olga Ley

This hurts me more than it does you—but, if knowledge needs revision, it must be revised and the only way to kill the pain is to learn the revised version as quickly as possible so that the old and usually dear concept gracefully slips into place in the historical science department.

The particular revision of knowledge I am talking about concerns a saurian known to virtually everybody and dear to the heart of every romanticist who ever dreamed himself back over sixty million years to the humid jungle of the Cretaceous Period. You know the picture that comes to mind when the term "cretaceous period" is used; the picture that has been described and drawn and painted a thousand times so far and that will still be thrilling and attractive a thousand times hence.

The air is warm and humid under a cloudy sky. The landscape is flat and most of it is flooded. Shallow and stagnant fresh-water lakes stretch from horizon to horizon, choked with green vegetation. Where the land rises it is covered with dense jungle, a jungle that is incongruously mixed of palm-treelike cycadeas, prickly araucarias and occasional pine trees and other conifers. In some places groves of sequoias reach up into the sky, the boughs of the biggest ones hidden in the low-lying clouds. And where the ground is too swampy to support large trees, small palmettos cluster together. Occasional flowers of timidly small proportions interrupt the green and brown of the vegetation with colored dots and the first butterflies clumsily slide through the air between them.

Far out in the shallow lake you can see gigantic snakes poking their heads into the air from time to time. But they are not snakes, they are the heads and necks of brontosaurs that feed upon the ever-present vegetation of the lakes, wandering along the lake bottom as deep as their long necks permit and venturing upon dry ground only when prompted by a special urge of hunger or sex. The "dry" jungle is alive with other, smaller but just as incredible forms. A couple of four-legged dinosaurs, as large as a full-grown rhinoceros and as wildly adorned with thorns and horn spikes as any small "Texas Toad"—*Phryno-*



APPARENTLY *Tyrannosaurus was not built to stand like this, after all, but—*

soma—of today, ponderously force their way through the underbrush, walking toward the water's edge and not paying attention to any existing path. Their weight, their strength and their hard and horny hide are sufficient reasons to assume that there *will* be a path wherever they go. At least, that there will be a path after they have passed by.

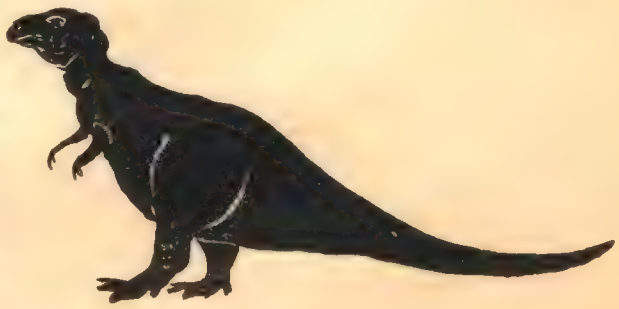
The noise they make prevents them from hearing another similar noise, something else is breaking through the jungle, fast and agilely in spite of all its weight. And suddenly the pursuer towers over the two four-legged dinosaurs. Towering over them on two tall and birdlike legs, foot-long teeth bared some thirty feet above the ground, with an enormous tail lashing from left to right and with two small and useless arms flaying the air in a rage of hunger and anticipation stands *Tyrannosaurus rex.* Tyrannosaurus the killer. Tyrannosaurus, which will always win in any battle with both, helpless and well-armed and well-armored prey.

The revision comes in in reference to the last paragraph of this description. It comes in in reference to *Tyrannosaurus rex.* There is very good reason to believe that Tyrannosaurus was no killer.

But facts first now. *Tyrannosaurus rex* belongs to the so-called Laramie Beds which, to a paleontologist, means that it is a North American form from the very last deposits of the Cretaceous Period. Tyrannosaurus had the doubtful pleasure of belonging to the last aegis of the dinosaurs, to the subperiod the end of which meant the end of dinosaurs in general. It seems certain by now that the dinosaur became extinct when a reduction of general humidity eliminated the perpetual clouds and the very dense jungle which protected the giants from the rays of the sun. Once the rays of the sun—I cannot help remember that this is a favorite *Leitmotiv* of many old fairy tales, the evil beasts die when the sun's rays strike them—could play upon the bodies of the dinosaurs their end had come. Being unable to perspire, they grew too warm inside their thick hides—and the "thermal tolerance" of reptiles is nothing to boast about.

Well, that event took place at the end of the subdivision which formed the Laramie Beds. Tyrannosaurus belonging at the very end of the time of the dinosaurs, it was, in other words, a late form, a fact which is important for a number of reasons.

Another fact is that the dimensions of Tyrannosaurus are usually exaggerated, exaggerated to the proportions I mentioned myself in that description. Measured from the tip of its four-foot skull to the region of the pelvis, Tyrannosaurus was twenty-two—twenty-three feet long, with a tail of the same length attached which brings the total length to about forty-five feet. Its teeth were from three to six inches long and its eyes were some eighteen feet above the ground, if it held its body at the customary forty-five-degree angle. Rearing up for a look around, the dragon may have managed to raise its eyes to a height of twenty-two feet for a short interval of time. There is no agreement on the weight of Tyrannosaurus, the estimates vary from five to ten tons, but there is complete agreement that the weight of the body was carried by the hindlimbs only. The forelimbs, which were only about the size of human arms, were completely useless, unable even to reach the mouth unless the head was bent down at a sharp angle.



PRETTY *well balanced for a stance like this.*

The smaller ancestors of Tyrannosaurus had comparatively large forelimbs and there is no doubt that they used them effectively for holding and tearing prey. Tyrannosaurus could not do that, but that fact proves nothing; birds of prey do not use their forelimbs either—except for flight—and do all the killing and eating by means of their feet and beak alone. Active forelimbs or not, a beast of prey can be highly efficient either way.

However, there is one factor that curtails marauding efficiency to a high degree: large weight of body. Tyrannosaurus was large and heavy; it is unlikely that it moved fast. During recent years a large number of fossil tracks have been found, many of which are ascribed to Tyrannosaurus. These tracks are enormous in size, some fifteen inches long and wide, deeply impressed and very clear and regular because of the weight resting on top of them. But not a single one of these rows of tracks shows anything but a very steady walk, a slow and ponderous walk, with steps about twelve feet long. Nowhere is there any sign of fast and sudden movements, nowhere is there any sign of the tail.

This, of course, does not prove that Tyrannosaurus could not move fast, it only proves that, as a rule, he didn't. But the absence of any signs of the tail confirms a suspicion which some anatomists had for entirely different reasons. It proves that the heavy tail was carried aloft, to balance the weight of the body. In that case, however, it is very unlikely that the body could have been carried at an angle of forty-five degrees or even more steeply. Chances are that a slowly walking Tyranno-

***THE** Tyrant-Lizard King, as usually pictured—*

***AND** the world's biggest saurian hyena as he probably looked in action.*

saurus looked about like the letter T, with body and tail carried almost horizontally.

Quite a number of years ago, the great Belgian paleontologist, Professor Louis Dollo—he died in 1931—made an interesting discovery when examining the skeletons of Iguanodon. *Iguanodon bernissartensis,* to give the full name, has been found in more than two dozen almost complete skeletons near Bernissart in Belgium and it was only natural that Dollo should study these remains more closely than anybody else. Iguanodon and Tyrannosaurus cannot be mentioned in the same breath. Not only is one European and the other American, one was a carnivore and the other a strict vegetarian and Iguanodon is some fifty million years older. Furthermore, the two belong to two different groups of dinosaurs—but Iguanodon and Tyrannosaurus looked somewhat similar in outline and both were large and heavy, even though the length of Iguanodon is only two thirds that of Tyrannosaurus.

In spite of all the differences mentioned, there exists a certain over-all similarity in build and their habits of life—except as far as food was concerned—must have been similar, too, especially the gait. And Dollo found that the tail vertebrae of Iguanodon, all the way down from above the pelvis, were literally shrouded with a tight mesh of ossified tendons, ossified when the animal was alive! This meant that the tail of that European giant must have been virtually rigid with no other possible function than that of balancing the weight of the body.

So far no Tyrannosaurus remains have been found that show a similar device for rigidity, but the example of Iguanodon shows what steps Nature had to take for so large a tailed biped.

But the skeletons of Tyrannosaurus itself have yielded another and much stronger clue. Tyrannosaurus, like many other dinosaurs, had a long corset of ventral or gastral ribs, bones that assisted the ventral muscles in carrying the weight of the inner organs. These gastral ribs were not solid in the older dinosaurs. The dinosaur Antrodemus from the Como layers in Wyoming, for example, had segments consisting of from three to four separate pieces. Antrodemus is fairly generally acclaimed to be an ancestor of Tyrannosaurus, but where the smaller ancestor had three and four separate bones the gigantic end product had only two pieces when young, and these two fused together with progressing age.

This phenomenon can only be explained by assuming that Tyrannosaurus, when resting, did so in a prone, instead of in a crouching, position. The ventral bones increased in thickness and fused together because almost the full weight of the body rested on them most of the time. Needless to say that such a feature does not help to increase agility.

Tyrannosaurus was too large to be constructed for rapid movement, and the solid construction necessitated by the great weight only increased the stiffness. It was for this reason that the paleontologist Matthew said many years ago that Tyrannosaurus must have attacked only prey that was equally clumsy in its movements. In fact, if the complete skeleton of Tyrannosaurus were known but heads were missing, paleontologists would assume that the large beast was a plant eater like the smaller Iguanodon.

But we know its head and its teeth and they speak against a plant diet. Which makes Tyrannosaurus definitely a meat eater, but this fact is coupled with the other one that at least an adult Tyrannosaurus could not hurt efficiently. These two facts can be combined in only one way. The food of Tyrannosaurus was meat, all right, but meat that could not run or swim away, meat that waited patiently to be eaten—dead meat.

Tyrannosaurus—with the possible exception of young specimens—was no hunter. Terrible *Tyrannosaurus rex,* which lived in the age when the great reptiles were dying out, was a stiff and slow-moving gigantic hyena. He was a carrion eater!

THE END.

PROBABILITY ZERO

Calling All Liars!

CORPUS DELICTI

By Henry Kuttner

Gentlemen of the jury, I am *not* guilty. It was suicide. I took every reasonable precaution. Can I be held responsible for a death that can't even be proved? Naturally there's no corpus delicti—

I'd like to explain just what happened.

He came into my laboratory a week ago, in response to my newspaper advertisement, and said he wanted the job. I told him it was dangerous. But, after all, I had already tried the process on myself, and I'd suffered no injury. It was a simple matter of extradimensional consciousness. He didn't understand, I'm sure; but he was a fat, husky specimen with a strong heart and satisfactory blood pressure, and I was more concerned with his body than with his brain. His name was Joe Coney.

"Look," I said to him, "I want you to take a trip with me. That's all. I want to make sure conditions in that . . . uh . . . place look the same to you as they do to me."

"O. K.," Coney said, reaching for a pretzel in the bowl on the bench. "Where to?"

"The fourth dimension," I told him.

He ate another pretzel. "Magic, huh?"

I hadn't intended to explain my theory, but that annoyed me. "There's no magic about it," I said, pretty sharply, I suppose. "We're conscious of only three dimensions, because our minds are conditioned to those dimensions. There are others. In fact, Mr. Coney, our physical bodies extend into at least a fourth dimension and possibly more."

He finished some pretzels and started on a box of chocolates. "Sounds like magic to me. I know where I am and where I ain't."

I tried to point out his fallacy. A three-dimensional consciousness can't realize its fourth-dimensional extension. Naturally! But that extension exists. Perhaps it's the basic truth behind legends about astrals. The fact is, there's a great deal more to us physically than we know. The only way to *feel* our fourth-dimensional bodies is to switch our consciousness into them—which my patented device can do.

Mr. Coney found a package of cheese crackers and finished them before I had completed my preparations. He submitted to the injections, which I duplicated on my own person, and, after turning on the power, we instantly found ourselves on a fourth-dimensional plane. Let me make this clear. Our minds, our intelligences, were now inhabiting the fourth-dimensional extensions of our bodies—leaving, obviously, the bodies we had possessed on Earth.

Everything looks entirely different on the plane of the fourth. My laboratory and the things in it were unrecognizable. Cubes had

changed to rods; retorts were corkscrews—yes, there is a decided difference. Mr. Coney was finishing the last of his crackers and staring around with a wild look in his eyes.

"Don't be afraid," I said. "Just tell me what you see. Does that look like trapezehedron to you?"

But he started to chatter like one of the lower primates. It took awhile to calm him down. By that time the dimensional drift had carried us away from the laboratory. Beneath us was an immense plain filled with cubes, spheres, and less identifiable objects, variously tinted, and most of them moving here and there.

"I think that's Fifth Avenue," I said. "Those are people, as they look to our four-dimensional consciousness. That eellike thing may be a bus. Quite tiny, isn't it?"

After a time, by dint of calm reasoning, I soothed Mr. Coney into some semblance of normality. He was even able to give me a certain amount of assistance in collating my data. We spent—let me see—perhaps two hours in the four-dimensional plane. Mr. Coney began to complain, so I finally shrugged and guided him back to the laboratory. He said he was hungry.

I am scarcely to blame for Mr. Coney's indiscriminate greed. I beg your pardon. To return—the tragic event occurred after we had returned to the laboratory. I was searching for the automatic ray control that would return us to three-dimensional existence, and not noticing what Mr. Coney was doing. As I have said, the room and all that was in it looked entirely unfamiliar to our vision. There was a gigantic pyramid in one curve of the wall, various indeterminate objects of all shapes and sizes—and it was one of those objects that Mr. Coney picked up. He was a greedy man, and I confess the rosy, pear-shaped thing looked rather appetizing. Anyway, Mr. Coney ate it in two bites.

Of course it wasn't a pear. I discovered that soon enough. It was Mr. Coney's own three-dimensional body, as it had appeared to our four-dimensional consciousness. Farfetched as it may sound, Mr. Coney had succeeded in the remarkable feat of devouring himself.

Naturally there is no corpus delicti. Your eyes, conditioned to a three-dimensional world, can't perceive it. And I am certainly not responsible for Mr. Coney's anthropophagous appetite!

MIRACULOUS FLUID

By Bob Tucker

You've probably heard a lot about astounding inventions—capable of performing miraculous work; inventions deliberately suppressed from an avid public for the sole reason that the said incredible invention would wreck an already-existing commercial empire?

Sure you have! For instance, the gas-pill sort of thing. *This pill in a tank of water will run your car two hundred miles!* (But it was suppressed by the Great Banana Oil Corporation of Texas and Cambodia—for obvious reasons.)

Let me tell you now of a wondrous invention, a magic fluid, invented at great expense by a well-known optical concern. We won't mention their name because they are paying us not to! In view of the results obtained from tests, the company not only suppressed its own product but shot the responsible chemist!

I am a projectionist in a movie theater. As you know, a projector contains many lenses—lenses vitally necessary to project a tiny picture hardly larger than a square inch up to the size of modern screens; ours, for instance, is 11x14 feet.

In each projector there are four glass surfaces between the carbon arc and the screen; first, a pyrex cooling glass, followed by three magnifying lenses. Each of these pieces of glass present a shiny surface to the beam of light, thus setting up four light-refracting agents, actually causing us to lose as much as twelve percent of the original light output!

It was to overcome this sheer loss of light that the optical company developed the magic fluid. When coated with the liquid, a lens lost all reflecting power, allowing one hundred percent of the light to pass through, unhindered.

They selected our theater for a test. After the lenses were treated and installed, I selected a reel at random—it was the third reel of a Clark Gable-Lana Turner scorcher. I threaded it into the machine, lit the light and hit the screen with the picture.

The illumination was brilliant!

We spent all afternoon scraping the picture off the screen. Literally scraping it off with knives. The treated lenses passed the light so well the picture solidified on the screen!

The optical company paid us to not mention their name.

DOWNFALL

By Malcolm Jameson

Whenever Noonan, the former chief technician of the War Inventions Board, saw fit to loosen up and spill some of the inside dope on the last war, we all listened, naturally, though I must say some of the things he let leak out were fanciful beyond belief. So, the night we gathered around the table in the back room of Jake's place and he asked us if we had ever heard the true lowdown on how the Nazis came to lose the war, we promptly chorused an eager "No." He took a drag at his highball and began.

"We used an Earliwell implosion bomb—the only one that was ever made, by the way. It was a fragile-looking thing, that bomb, something like a bubble dancer's balloon, but at that it weighed enough to start falling, and that was all that was needed. You see, an implosion bomb works on exactly contrary principles from one of the explosive variety; instead of erupting matter with great speed and violence, it *inrupts* it, getting heavier rather than lighter all the time, so that its terminal weight may be anything. It sucks into itself whatever it comes in contact with—air, water, land, or what have you; whatever it hits ceases to exist except as a freshly incorporated part of the bomb itself.

"We took it over Germany in a bomber, being careful not to touch off its fuse until it was well over the side or otherwise the plane and its crew would be imploded, too—and at the wrong moment. Munich was the target, but when we got there the ack-ack was pretty hot, and since it did not matter particularly where we dropped it, we heaved it over into an empty field. The bomb got away clean and started down very nicely. In fact it fell rather faster than even a solid iron one would have, for there was no resistance from the air. Every molecule of that it encountered promptly became part of the bomb.

"Very well. The bomb hit the ground and went on in. Since the earth melted under it the instant of contact and was at once imploded, the bomb continued on downward in free fall. It was just as if it had been in vacuum. I forget how long it took now, but it was quite a long time before it got to the center of the earth. By then its weight was colossal—probably approaching that of dwarf-star stuff—and it was hitting it up at a terrific rate of speed. So it went on and up, that time, until it hit the bottom of the Pacific and came up and out and went on toward the stars."

"Hey!" protested Charlie Wintergreen, "you can't do that to me. Why didn't it stick at the center of gravity?"

"Why should it?" asked Noonan mildly. "What was there to stop it? Momentum, my boy, is something you can't laugh off, and there was no way to brake the thing since everything it brushed against went out of existence."

Charlie looked doubtful about that, but grunted a little and said go on.

"You may remember that about that time an Anzac patrol cruiser reported a strange maelstrom appearing a few hundred miles south of the Society group? No one could see the bomb emerge, of course, since by its nature it could not entrain water into a waterspout, and was going so fast by then as to be invisible. Likewise, no one followed the bomb on its trajectory, so the explanation of what occurred is purely theoretical. However, the subsequent results bear abundant testimony that what I am telling you is how it happened.

"Some hours later a geyser of superheated steam appeared near Munich, and after that—"

"Now, listen," objected Charlie, a little angry now, "we let you have your way about your fancy bomb. After all, you did provide it with continally increasing inertia. But water simply wouldn't act like that—not if the whole Pacific fell into the hole. It would fall back when it reached the same height on our side."

"Not a bit of it. You forget the water picked up additional oomph on the way, too. Heat, mostly—heat from the earth's core, and also from the friction as it blew past it. Anyway, it came out on the European side with a velocity that was no less than terrible. The superheated steam must have made it to the upper stratosphere in practically nothing flat. And it induced vertical air currents with the effect that for a day or so Germany had a stationary tornado of national proportions. Most of the buildings were blown down by the inrushing surface winds, if you remember. Then came the hail—if you call ice in thousand-ton chunks hail. You see, all that steam hitting the stratosphere had to condense, and when it did it fell back. The ice fall finished what the winds began. The Nazis folded up—what was left of them."

"Why did it quit so abruptly?" challenged Charlie, still unmollified. "It seems to me that

as long as there was water left in the Pacific the thing would keep on going."

"Cave-ins," explained Noonan simply, "from both ends of the tube simultaneously. The stuff met itself in the middle and plugged the hole. Now we're back to normal."

"Humph," snorted Charlie. "The history books mention the winter of 1943 as a humdinger with violent gales and heavy snows, but—"

"You wanted the real low-down, didn't you?" asked Noonan. That time he finished his drink in one big swallow.

CAMOUFLAGE

By John K. Aiken

Not bad whiskey, this. It'll give me the energy to tell you how I saved Katzelbogenstein from the Centralists, back in '59. That was when I was their chief of intelligence. I left the place not long after—I got to thinking they suspected I was a little too intelligent, and queer things used to happen to people in that position. And, of course, the Centralists overran the place the following year, just the same—you remember? Ah, well, if *I'd* still been there—

In the beginning of '59 I put in for head of the Katzelbogenstein Wine Research Institute—thought it'd suit me. I'd plenty of influence and pulled lots of wires, and presently they confirmed my appointment as chief of intelligence. I was a bit flattered and diffident about that, till I found that was just the way things worked there. The prime minister was a botanist—old family, you know, but gone to seed. And the chief of staff was a historian. He wrote lovely reports. There was a king around somewhere, too, but you never saw anything of him—he was just an animated corkscrew, and not very animated, either.

Luckily, most of the staffs were fairly efficient, so when one of my men brought me a report that the Centralists were planning a dawn swoop on us with bombers and parachutists in a week's time, I was quite upset. I even thought of quitting. Everyone else in the government was in the same hell of a state, except the king, of course. But after a while I got a notion.

I'll have to tell you what the country was like. A little place, ringed with mountains—they were full of pretty efficient fixed defenses, which was why the Centralists chose to come over the top. A good many lakes and river and waterfalls and what-not—and in the fall, which was when all this happened, the weather was usually cloudy. Yes, the weather had a good deal to do with my plan.

Night before the attack was due, I mobilized everything that would fly in the country, and a pretty farfetched-looking collection I got, I can tell you. We—that's me and my staff and the ministers, the only ones who knew—loaded them up with the paint we'd been making all week. I knew something about the technical side of that, and the minister of finance, who was an artist, advised me on the finer points. It would have helped a lot if we could have used the army, what there was of it, but it would have deserted to a man. Well, we got going—there was a full moon above the clouds, and we could see what we were doing, more or less—and sprayed the countryside a nice dove-gray, with lighter patches. We used a water paint that the next rain would take off, except for the lakes, where we used an oil, with a little soap to make it spread. Lucky it wasn't raining, or we'd have needed oil for the whole job. Then we started on the clouds: sprayed them green with blue and black patches in the right places, more or less. The finance minister insisted on putting in a lot of artistic detail that I felt was quite unnecessary. We used an aerosol paint for that, with just enough atomized glue to stick it to the clouds and stop it drifting. It was all done by midnight—I told you it was a little place—and, personally, I went to bed then.

Well, came the dawn. I don't know what the people thought about all the exterior decoration that had happened in the night, though no one who'd lived for long in Katzelbogenstein would have been much surprised—and anyway they soon had something to take their minds off it, because the Centralist dive-bomber squadrons began coming over the mountains. When they first appeared they seemed a little confused, rolling a good deal and doing falling-leaves. Then they all settled down to flying inverted, dived up into the clouds—ever seen green clouds?—and disappeared. We never really did find out what happened to them, but I imagine they got up into the stratosphere and froze.

Then the heavies and troop-carriers turned up—they didn't bother with fighters, because they knew what our air defenses were like. They would have been an impressive sight if they hadn't all been flying upside down. Yes,

we'd fooled 'em into getting their topography the wrong way up, and pretty soon they followed the others up into the clouds and that was the last we saw of 'em. We gave out it was maneuvers, and I could do with a drop more of that whiskey, if you could spare it.

Eh? What happened to the bombs and parachutists? Mean to tell me you don't get it? Well, I must say, you deserve to lose the last of the whiskey . . . ah, that's better . . . silly fellows dropped 'em all *upward*, of course.

ULTIMATE OPPOSITION

By Roscoe E. Wright

The heavy-set, middle-aged Professor Bullh lowered his bushy gray brows and rumbled, "You blowhard, I'll foil any pseudo-scientific farce you can conceive."

The lank, lean, fifty-summers-old Dr. Spout snapped back, "You calloused old mud turtle, I have created the irresistible force and I defy you to withstand it."

Bullh grunted and replied, "I accept—though it be nonsense. Now get out of my laboratory—or else."

With, "Tell me when you have given up," Dr. Spout departed, leaving the stubborn Professor Bullh to meet his own ends.

Bullh was no one's fool—except his wife's. He reflected, "I know Spout. The old rascal has something or he wouldn't challenge me. He mentioned an irresistible force—hm-m-m."

Bullh lost himself in thought for a few days.

At last he decided upon a way that might result in failure for Spout's plans.

Aloud to his scratch tablet and calculations Bullh mused, "I create a perpetual field of force. The more opposition it gets, the more its resisting powers are accelerated. Just involves a little time. Spout ought to give up in a day—my force A on my defense screen goes to the future, comes back in time to where it did exist, then both A forces go into the future and come back thus: an infinite number of units of resistance. Of course, while traveling in time the constantly strengthening defense power will exist long enough each second to insure safety."

Two weeks later—the work completed—Bullh was sleeping when his phone rang.

Marandy called, "Zek, Spout wants you on the phone."

"O. K., dear, right up," answered Bullh, his bulldog nature oddly enough vanished.

Professor Bullh, taking the receiver down, in his best bass voice began, "Hello. I. Q. Bullh speaking. . . . Yes, of course I remember, Spout! . . . NO! You know I never back out. . . . Oh, keep quiet! I'll blast your theories in exactly two minutes, if you can move fast enough. . . . Yes, go ahead, fire it at me," thundered Bullh, hanging up and rushing to the basement where he pulled a switch on some fancy machinery.

Instantly a dome of radiant silver appeared over Bullh's home and almost simultaneously across the countryside, laying waste in its wake, thundered an invisible force.

The force struck Bullh's dome; the cosmo reeled; Bullh pushed the switch back in place and ran backward upstairs to the phone.

The impossible had been achieved—Bullh had backed out of a tight spot, but what could a fellow do against REVERSE ENTROPY?

"A SNITCH IN TIME"

By D. C. King

The two men sat quietly, gazing into the fire. The wind whistled outside. They had been discussing crime.

"Did I ever tell you about the man who traveled through time to rob a bank?" asked the gray old man in the straight chair.

"No," replied the fat old man in the easy-chair thoughtfully. "I don't think you did."

"Well," began the old man, pouring himself a drink, "it happened this way:"

Von X. Dillinger de Rue, the scientific crook, rocked back on his heels and surveyed with proud and appraising eye the gleaming globe of metal which rested on the concrete floor of his laboratory. Inside it, vacuum tubes hummed, panels glowed and flickered, relays snapped and busbars surged with power. With a final contemptuous snicker for the minions of the law, this person donned a tight-fitting insulating suit of a queer metallic lustrous material, and pulled a crash helmet over his broad forehead. He thereupon swung open a square copper door set flush with the thick metal walls of the sphere. He entered, and the door shut behind him.

With a sharp, crackling noise, the globe rose

easily from the floor and attained a height of five feet, at which altitude it was halted by this erstwhile citizen who had been watching this proceeding by means of a device which enabled him to see through solid walls. Rose and violet lights played about the machine, which then moved forward toward the large doors at the back end of the spacious room, and they opened as soon as the globe broke a photoelectric beam. The sphere rose up into the night sky, the huge doors swinging automatically shut behind it. De Rue then propelled his strange conveyance toward the Ninth National Bank of Ignacio.

He brought it down in the alley back of this building over a spot marked on the street with a cross of white paint. Noting his direction of forward flight, he thereupon closed a great red master switch.

Then he moved in another direction. Since he had moved, he was not there, and yet, he was there—moving backward through time in the fourth dimension.

He halted his headlong flight in the approximate year 1000. A sunny landscape burst upon the viewplate, but he took no notice. Everything was proceeding according to plan. Alighting from his wondrous contrivance, he took a yardstick and measured out forty-two feet in the direction he had just previously calculated. He drove in a stake at this point, reentered, and moved the coppery ball directly over this spot. Having thus maneuvered, he began his return journey, through time.

Arriving in the money vault in the selfsame bank from which he had started, he neutralized the controls, hopped out, and began to pile bags and boxes upon the capacious floor of the floating globe. Then, smirking a very secret smirk, he clambered back aboard, shut the door with a clang, and commenced his plunge back to the year 1000.

"So he got away with it, eh? Well, I must say that's pretty doggone clever," chuckled the floridly fat man in the easy-chair.

"No," muttered the old man, "he didn't get away with it."

"He didn't? But how . . . who could have—"

"Well," began the ancient person, taking a worth-while sip of his drink, "you see, there's a lot about the fourth dimension that we, as three-dimensional beings, cannot comprehend. Even the scientific crook, advanced as he was, did not grasp the realization that the fourth dimension is simply the locus of all the possible positions of our universe in its progressive path through space. In other words, through time. They are one and the same. But can you imagine what would occur if two vehicles each going upward at sixty thousand years an hour collided?" He smiled.

"Huh? I'm afraid I don't dig you."

"You don't see? But look now—suppose you take a two-dimensional being out of his drably flat world and move him through our space in a path parallel to his own, and, at the same time, take another being from some other place on his world, and move him in the same path of movement, only in an opposite direction. What would happen?"

"Why . . . they'd meet."

"Of course. And so did De Rue meet himself coming from the year 1000. The explosion took place in the fourth dimension, of course. But he had annihilated himself coming back before he had even gotten there. So he couldn't have stolen any money. And he violated a fundamental law of the universe: to produce an effect, there must be a cause to produce the effect. So—he just *isn't.*"

"But—" began the fat man, staring into the fire, "now you look here—"

DOUBLE, DOUBLE, TOIL AND TROUBLE

By Nelson S. Bond

Willow Road,
Grove Park,
Roanoke, Virginia,
July 20, 1942

Mr. John W. Campbell, Jr.,
Street & Smith Publications, Inc.,
79 Seventh Avenue,
New York, New York.

Dear John:

Just a note to let you know I'm working on a new short story for Astounding, a neat little five-thousand-worder called "Test Case." The plot's quite different, and I'm sure you'll like it.

Oh, by the way—within a day or so I'm afraid you're going to receive a "crank letter" from a whackypot who lives here in Roanoke. Be a good chap and toss it in ye goode olde wastebasket, eh?

Best regards,

Nels Bond.

Willow Road,
Roanoke, Virginia,
July 21, 1942

Mr. John W. Campbell, Jr.,
Editor: Astounding Science-Fiction,
Street & Smith Publications, Inc.,
79 Seventh Avenue,
New York, New York.
My dear Mr. Campbell:

Within a very few days you will receive the manuscript of my new story, a five-thousand-worder entitled "Test Case."

Will you do me a great favor? If there should reach your office a manuscript by this name upon Page One of which is *not* marked a large red "X," will you please hold this manuscript for comparison with my own, which will be so marked? This is *very* important! The other story may be written under *my own name* by a faker and plagiarist now living in this town.

Yours most sincerely,
Nelson S. Bond.

Willow Road,
Grove Park,
Roanoke, Virginia,
July 25, 1942

Dear John:

Here's that story I promised you. Hope you like it.

Yours,
Nels Bond.

Willow Road,
Roanoke, Virginia,
July 26, 1942

Dear Mr. Campbell:

Inclosed is the new short story, "Test Case," which I sincerely hope will meet with your approval.

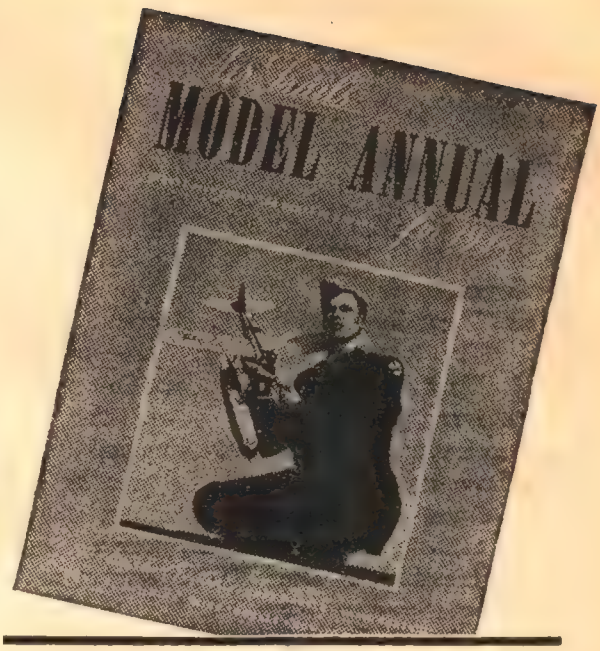
Very truly yours,
Nelson S. Bond.

STREET & SMITH PUBLICATIONS, INC.
Astounding Science-Fiction

July 26, 1942

Mr. Nelson S. Bond,
Willow Road,
Grove Park,
Roanoke, Virginia.
Dear Nelson:

What on earth's the matter with you? Have you been writing too many fantasies? I've just read "Test Case," and it's a buy, but what-



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ever possessed you to send me two copies? And what is the meaning of your recent letters?

Yours,

J. W. C.

Willow Road,
Grove Park,
Roanoke, Virginia,
July 28, 1942

Dear John:

Glad "Test Case" is O. K. Thanks for the check. The letters? And the other manuscript? Why, I suppose they must be what I tried to warn you about. You see, there's a wingding living down the road from me a way—somehow or other he's got the idea he can knock off an easy living copying my stories and submitting them under my name. Just pay no attention to him; I'll straighten matters out somehow or other.

Ever thine,

Nels Bond.

Willow Road,
Roanoke, Virginia,
July 30, 1942

Dear Mr. Campbell:

Did you receive my story, "Test Case"? The one marked with an "X"? Have heard no word from you.

Nelson S. Bond.

Willow Road,
Roanoke, Virginia,
August 3, 1942

Dear Mr. Campbell:

Did you receive my manuscript, "Test Case"? This is *vitally* important. Please answer immediately!

Nelson S. Bond.

RKEVA: 815P842
MR. JOHN W. CAMPBELL, JR.,
ASTOUNDING SCIENCE-FICTION,
79 SEVENTH AVENUE,
NEW YORK, NEW YORK.
DID YOU RECEIVE MANUSCRIPT "TEST CASE"? TERRIBLY IMPORTANT. PLEASE WIRE REPLY MY EXPENSE.
NELSON S. BOND.

NYCNY: 932A842
MR. NELSON S. BOND,
WILLOW ROAD,
ROANOKE, VIRGINIA.
OF COURSE RECEIVED MANUSCRIPT AND FORWARDED CHECK AS PER LETTER JULY 26TH. WHAT'S GOING ON? YOU'RE DRIVING ME NUTS...!
JOHN W. CAMPBELL.

Willow Road,
Roanoke, Virginia,
August 7, 1942

Dear Mr. Campbell:

I knew it! That dirty, sneaking scoundrel has done it again! Chiseled in on my brains—my work—and all because you did not pay any attention to my warning about the crayoned "X" on *my* manuscript.

He's been doing it for months, now. And there's not a thing I can do to stop him. I've been to the post office, and I've hired a lawyer, but everyone tells me it is his right to use the name "Nelson S. Bond," and so long as his stories reach you before mine—I mean they're both my stories, but—

I'd better start at the beginning. I am Nelson S. Bond—the Nelson S. Bond who started writing for Astounding Stories 'way back in 1937. I sold you "Down the Dimensions" and "The Einstein Inshoot" and a host of other stories.

Well, one day last year I was approached by a funny little old geezer who identified himself as a professor of mathematics at nearby Roanoke College. It seems his hobby was experimenting with time travel and knowing I was a science-fiction writer, he thought I might be interested in seeing a machine he was working on.

I went to his workshop and, sure enough! he had a machine. I can't tell you how it operated, because he wouldn't tell me. He can't tell either of us now, because he disappeared several months ago. Anyhow, to make a long story short, he demonstrated the instrument in my presence. I stepped onto a platform, and he pressed a couple of buttons— But why go into that? The same sort of things happened that have happened in a dozen of my yarns, as well as those of Binder, Wellman, del Rey and the rest of the gang.

Only the weird part was that when I stepped off the platform, I found myself facing not only the old scientist, but—*myself!*

What I believe is that when the old duck returned me to normal after my brief time flight, he missed his timing by a couple of minutes. So there we were, the two of us!

Well, naturally I insisted that this . . . this interloper should go through with the experiment, too, so we would become co-ordinated

again. But he refused to do it. He said he had seen quite enough—"too damn much!" was his exact expression—and he pranced out of there before I could lay hands on him.

And that's when my troubles began. Ever since then, it seems my mind and that of the other Nelson S. Bond have been somehow *en rapport*. Only it works to my disadvantage. I think up story ideas and slave over 'em, but time after time, before I can get my manuscripts to your office or that of another magazine, he has stolen my idea, written and sold the story—in exactly the words I have concocted!

And that's not the half of it! He walked into my home, took it over as his own. He lives with *my* wife—plays with *my* baby—wears *my* clothes—eats the food *my* thoughts have provided—and I can't do a thing about it! Everyone in town believes what he has told them about me—that I am a faker trying to capitalize on a physical similarity to himself. I've lost all my friends. I've had to move to a dingy little dump at the other end of town. We both live on Willow Road, but *he* has my home in Grove Park, while I live down by the railroad yards.

Something must be done about this, Mr. Campbell! I can't think of any way to solve the problem, short of asking you to mail duplicate checks for every story he—I—we—send you. But that, I know, is impossible. Besides, there's my home and future to think of.

Won't you please ask some of your scientifically minded readers to help me out of this jam. And in the future, please don't pay for his manuscripts until you've read mine. I am slowly starving to death.

Desperately yours,
Nelson S. Bond.

P. S. I'm going to make one last try. I've got a new story idea—the best I've ever had. But I'm not going to tell anyone a thing about it. I'm going to keep it a secret until I can get it into your hands. Keep an eye out for it.

Willow Road,
Grove Park,
Roanoke, Virginia,
August 7, 1942

Dear John:

I've got a new story idea—the best I've ever had. It's so good I'm not even going to tell you about it until I can get it into your hands. Keep an eye peeled for it.

Yours as ever,
Nels Bond.

IN AGAIN, IN AGAIN . .

BUT HE Never Went Out!

Monk got off the floor and walked into the cabin . . . but then he realized that he had just been inside and hadn't gone outside . . . so how come?

And then there was a plane that took only four hours from California to Tahiti.

It wasn't until Doc went through some similar experiences in time that he began to suspect the strange, exciting truth. Don't miss THE KING OF TERROR in the April issue of

DOC SAVAGE

10c A COPY AT ALL NEWSSTANDS

THE WEAPON MAKERS

By A. E. van Vogt

CONCLUDING *the story of Captain Hedrock, Earth's immortal man—up against one force—the outlawed Weapon Makers—who could make that immortality end abruptly if they could but find him.*

Illustrated by Kramer

In the world of the Isher Empire a titanic struggle is taking place. An interstellar drive has been perfected; and the Empress Isher, convinced that it will be ruinous to her government, and that emigration to the stars will strip the solar system of its inhabitants, is using all her power to suppress the invention.

The Weapon Makers, a unique organization, outlawed, but maintaining its freedom by means of secret inventions, is striving with equal determination to force the stellar drive into the open.

Into this maelstrom of opposing forces, quite unsuspecting, comes Dan Neelan, searching for his twin brother, whom he believes dead. He captures the interstellar ship and discovers that his brother and several scientists have been marooned by a treacherous employee named Greer on a hellish desert planet of one of the suns of Alpha Centauri.

Between Dan Neelan and his brother Gil there had existed an intimate mental and neural relationship, the result of training in the Eugenics Institute. They could read each other's minds at short distances; a tingling awareness of the other's life remained strong over much greater gaps of space. This awareness had ended when Gil went to Alpha Centauri.

Before Neelan can carry out his determination to go to Centaurus and rescue his brother and the scientists, he is captured by the empress, and tortured for information.

The empress does not suspect that Neelan is in full control of the ship; despite all pressure he keeps this information away from her, but agrees to help her seize the ship, as this will get him back aboard.

Unfortunately, getting aboard is not enough; the empress' plans include the use of big super-energy guns to break into the walls of the ship; it is the concussion from these monsters that prevents Neelan from reaching the control room. He manages to escape in the ship's lifeboat, but is knocked unconscious by the super-fast acceleration.

Uncontrolled, the little ship hurtles into interstellar space in the general direction of Alpha Centauri.

Earlier the empress, in her determination to protect her family's sovereign power, has sentenced to death by hanging a Captain Hedrock, whom she believes to be a Weapon Shop spy, and with whom she is half in love.

Captain Hedrock, however, is more than just a Weapon Shop agent, protecting Weapon Shop interests inside the palace. He is Earth's only immortal man, with private long-range purposes of his own, transcending any temporary commitments he might make.

He persuades the empress to exile him. Unfortunately, in the stress of the hanging episode, the Weapon Makers have come to suspect his bona fides. He is brought before the Council of Thirty and sentenced to death on the suspicion that he is not what he seems. Hedrock escapes, but now the mighty Weapon Makers organization is after him.

He goes to one of his secret hide-outs, and prepares

for the tremendous struggle ahead. He owns many powerful companies, and he now uses them to help him force the empress to give up the secret of interstellar drive.

His own purposes are of a great nature: to learn the secret of his immortality, so that all men can be immortal; to further the progressive spirit of men against all tyrannical forces. He realizes that it is necessary to put the fear of revolution into the heart of the family-proud empress.

This he does by using the Weapon Shop secret of vibratory magnification to enlarge himself to giant size. As a hundred-and-fifty-foot giant, he stalks through great cities, destroying them. Homeless peo ple are the most likely to rebel.

The tension increases hour by hour. Hedrock knows that the Weapon Makers must know that he is the giant; and he does not underestimate their power. Among the Weapon Makers are almost literally superhuman men. There is, for instance, Edward Gonish, the No-man, who needs only ten percent of the facts to divine a whole truth.

Gonish is Hedrock's friend, but Hedrock knows that Gonish is first of all a Weapon Shop man, and that, convinced of the necessity, he will help the Weapon Makers trap Hedrock.

The crisis comes when the empress, alarmed by the gathering unrest created by the giant, invites Hedrock back to the palace. The time has come, Hedrock realizes, to use one of his own secret inventions. He tests the invention, then goes to the palace.

XII.

The warm, cloudy night was ablaze. The long street, the notorious Avenue of Luck, scintillated like a monstrous jewel, as Gonish walked along it. Mile on dazzling mile of jewel, fusing in the remote distance in either direction to a sun-bright shimmer of mingled resplendent white and flaming color.

Great signs glowed at the No-man, a lambent glory of light-engraved messages:

WIN A FORTUNE
WALK IN WITH TEN CREDITS
WALK OUT WITH A MILLION

THE DIAMOND PALACE
10,000,000 DIAMONDS BLAZON INTERIOR
TRY YOUR LUCK IN A SETTING OF DIAMONDS

There were more of that type as Gonish walked on: THE RUBY PALACE—GOLD PALACE—EMERALD PALACE—intermingled with hundreds of no less gaudy structures. He came finally to his destination:

LUCK EMPORIUM
BETS AS LOW AS FIVE PENNIES
NO LIMIT

The No-man paused smiling gravely. It was fitting that the empress had selected as their rendezvous one of her properties that catered to the masses. Now, if she only knew where Hedrock was, and he could get the information out of her, and escape with his life—

Gonish's eyes studied the crowds of predominantly young people who were streaming in and out of the garish building. Their laughter, the rich young voices of them, quickened the splendor of the blazing night.

It all seemed normal, but he stood with practiced patience measuring the faces that moved by, assessing the characters of the loungers from their expressions; and it didn't take long to grasp the reality:

The sidewalks swarmed with Imperial Government agents.

Gonish stood grim. The Weapon Makers council had insisted that the place of meeting be public. It was understandable that great precautions should be taken by the secret government police, and also that her majesty would not be keen on having it known that she was dealing with the Weapon Shops so soon after the appearance of the giant.

The conference was scheduled for the small hour of 2:30 a. m. It was now—Gonish glanced at his watch—exactly 1:55.

He remained where he was, conscious of a gathering sadness that it was his duty to attempt to ensnare Hedrock. But the identification of Hedrock from his message, as the man behind the giants had been shockingly convincing and, it seemed to Gonish, fully justifying the fears of the council.

It was simply unthinkable that a man who possessed the basic secrets of the Weapon Shops could be permitted at large. And if, as the council believed, the empress knew his whereabouts, the information must be cleverly extracted from her at the meeting which she herself had suggested.

His friend Hedrock must die—and meanwhile he had better go inside and look around.

The interior sparkled with gardens and fountains and mechanical games. It was bigger than it seemed from outside, longer. And it was crowded with about equal numbers of

men and women. Many of the women wore masks.

Gonish nodded with abrupt comprehension. So that was to be the method of concealment. The Empress Isher would be simply one more masked woman.

Gonish paused before a game that was all flashing fire, a spray of violently glittering numbers twisting over the velvet blackness of a great board.

Thoughtfully, the No-man watched several games run their blazing course, trying each time to impress the over-all structure of the game into the ultratrained region that was his brain. Finally, he placed ten credits on each of three numbers.

The fire slowed its gyrations in its coruscating fashion, and became a dazzling pillar of numbers piled one on top of another. The croupier intoned: "74, 29, 86, paying odds this time of 17 to 1."

As Gonish collected his five hundred ten credits, the croupier stared at him. "Say," he said in an astonished voice, "that's only the second time since I've been at this table that anybody's ever won all three numbers."

The No-man smiled. "Mind over matter," he said gently; and disinterested, wandered off. He could almost feel the croupier's astounded gaze boring into his back.

What he wanted was a game he couldn't solve with his special abilities. And there was still nearly twenty-five minutes to find it.

He came to an enormous machine with balls and an involved series of wheels under wheels. The balls, sixty of them, all numbered, started at the top; and, as the wheels spun, the balls rolled gradually downward, progressing from wheel to wheel.

The farther down they went, the more they paid; but the first half of that complicated though swift journey didn't count—and few ever got lower.

The great attraction, so far as Gonish could make out, was the sensation of watching one's ball go down, down, with hope not fading until the last second.

It turned out to be too simple. His ball went farthest four times in a row. Gonish pocketed his winnings—and came finally to a game that was a sphere of black and white light. The two lights merged into a single, spinning beam, and came out all white—or all black. The bet was: which would it be.

Not once was he sure. He finally laid his first wager on the gambler's basis that white was the symbol of purity.

White lost.

He watched his money whisked off, and decided to forget purity.

Black lost.

Beside him, a woman's rich laughter tinkled; and then, "I hope, Mr. Gonish, that you can do better than that with the giant. But please follow us to the private rooms."

Gonish turned. Three men and a woman stood there. One of the men was Prince del Curtin. The woman's face under its mask seemed long and the mouth itself was unmistakably Isher. Her eyes through the mask slits glinted green and her familiar, golden voice completed the recognition picture.

The No-man bowed low, said, "I'm sure I shall."

He took his time. There were questions he wanted to ask. The strange thing was, his casual references to Hedrock produced only silence.

After a while, that was astounding. Gonish leaned back, studying the faces of the three men and the woman, genuinely disturbed. He said at last, very carefully:

"My feeling is that you are withholding information."

It wasn't, he thought after he had spoken, that they could be doing it consciously. Their earnestness was unmistakable. And they couldn't possibly suspect that it was Hedrock he was after. Yet there seemed to exist among them a tacit understanding that nothing be said about Hedrock.

It was Prince del Curtin who made the denial, "I assure you, Mr. Gonish, you are quite mistaken. Among us four is every scrap of information that has come in about the giant; and, of course, any clue that may have turned up in the past as to his identity will probably be somewhere in our minds, too. You have only to ask the proper questions, and we will answer."

It was convincing. This was going to be harder than he had thought, and it was just possible that, dangerous though it was, he might have to come into the open. Gonish said slowly:

"You are mistaken in assuming that you are the only reliable sources of information. There is a man, probably the greatest man now living, whose extraordinary abilities we of the Weapon Shops are just beginning to appreciate.

I am referring to Robert Hedrock, who holds the rank of captain in your majesty's army."

To Gonish's amazement, the empress leaned toward him; her gaze was intense, her lips parted breathlessly, her eyes shining.

"You mean," she whispered, "the Weapon Shops consider Robert . . . Captain Hedrock as one of the world's great men?"

She did not wait for a reply, but turned to Prince del Curtin. "You see," she said, *"you see!"*

The prince smiled. "Your majesty," he said quietly, "my opinion of Captain Hedrock has always been high."

The woman faced Gonish across the table, said in a strangely formal tone, "I will see to it that Captain Hedrock is advised of your urgent desire to interview him."

She knew! He had that much. As for the rest—Gonish leaned back in his chair ruefully. She would advise Hedrock, would she? He could just imagine Hedrock's sardonic reception of the information.

Gonish straightened slowly. His situation was becoming desperate. The entire Weapon Shop world was geared to act on the results of this meeting. And still he had nothing.

There was no doubt that these people here were as anxious to get rid of the giant as the Weapon Makers were to get hold of Hedrock; and the irony was that the death of Hedrock would simultaneously solve both problems.

With an effort, Gonish mustered his best possible smile, and said:

"You seem to have a little mystery among yourselves about Captain Hedrock. May I ask what it is?"

Surprisingly, the question brought a puzzled stare from Prince del Curtin. "I should have thought," the man said finally, politely, "that in your fashion you would long ago have put two and two together. Or is it possible that, of all the people in the solar system, you are not aware of what happened tonight. Where have you been since 9:45?"

Gonish was silent, utterly startled. In his desire to keep his mind clear for this meeting, he had come early to Imperial City. At 9:30 he had gone into a quiet little restaurant. Emerging an hour later, he had attended a play. That ended at 12:30. Since then, he had wandered along sightseeing and—

He had ignored the news. He knew nothing. Incredibly, half the world could have been destroyed and he wouldn't know. Prince del Curtin was speaking again:

"It is true that the identity of the man in such a case is traditionally withheld, but—"

"Prince!"

It was the empress, her voice low and tense. The men looked at her, startled, as she went on, more grimly:

"Say no more. There is something wrong. All this questioning about Captain Hedrock has an ulterior motive. They're only partly interested in the giant. They're—"

She herself must have realized that her warning was too late. She stopped and looked at Gonish; and the look in her eyes brought pity welling up in him. Until this moment, he had never regarded the Empress Isher as quite human; but now—

Only there could be no pity. With a jerk, Gonish brought his hand up near his mouth, tore back the sleeve, and said ringingly into the tiny radio that was strapped there:

"Captain Hedrock is in the empress' personal apartment—"

They were quick, those three men. They bowled him over in one concerted rush; and then they were on top of him. Gonish offered no resistance, but simply lay there.

After a moment, he felt an odd relief that he, who had been compelled by inexorable duty to betray his friend, would now die, too.

XIII.

It wasn't that the darkness lightened. Neelan sagged for a long time with his eyes open; and the night was abysmal. But there was a difference.

Why, of course, he thought finally, he was conscious, whereas he had been—

What?

It was hard for a moment, then, to grasp the idea of the two kinds of night involved. His brain seemed far away, his thought a dead-slow panorama.

Memory came, but there was a remote quality to it, as if, not he, but some other facet of himself had experienced the *physicae* involved.

Slowly, Neelan grew aware of a quietness around him, a lack of sensation, of movement. The elements of his mind gathered a little closer together; he straightened in the control chair, and glanced at the 'stat plates.

He was staring into space. In every direction were stars. No sun; nothing but needle-sharp points of light of varying brilliance.

And no pressure of acceleration, no gravity It wasn't an unusual experience; it was simply—

He glanced at the Infinity Drive, but it was still in gear. That was the trouble. It *was* still in gear. And there was nothing.

The speedometer showed impossible figures; the automatic calendar said that the time was 7 p. m., August 28, 4791 Isher.

Neelan nodded to himself. So he had been unconscious for twenty-two days; and during that time the ship had gone—

He glanced at the speedometer again—and turned away swiftly without hazarding even the beginning of an estimate.

The abrupt physical movement brought a whirling in his brain, and a blur of nausea. He sat for a while, being quietly but violently sick. Slowly, however, his body that had withstood so many strains, struck a metabolistic balance; and realization came that hunger had brought that painful dizziness.

The craving grew monstrously from the thought of it. Sense-blurring hunger. Incredible, tearing emptiness of hunger! It was so nearly annihilating in the anguish it set in motion that his body seemed on the verge of twisting up.

He made two attempts to get to his feet, and each time fell back ill and dizzy. The third time he lowered himself to the floor, and crawled toward the galley.

Eating required a full hour because, after the first few sips of a reviving dextrose liquid, he forced himself to a careful diet. Afterward, it struck him that he ought to sleep.

Neelan hesitated. There was the problem of his distance away from Earth, and the curious lack of acceleration pressure. Somewhere in the course of his flight, the stellar drive had attained a supernal oneness with some great basic force. And the Point 00000...1 of inertia had vanished like a time-set smoke screen.

Frowning, he went back to the control board, switched off the lights again, and sat for long minutes manipulating the telescopic adjustors on the 'stats. A few stars waxed brighter, but none rushed into size; none showed any evidence of being really near.

The speedometer still registered something over four hundred million miles a second. At that rate, he was covering the distance between Earth and Centaurus every eighteen hours. The problem accordingly was—

Thoughtfully, he clutched the automatic half-circle into the steering shaft. It whirred and then went *ticaticatic*—a hundred and eighty times, very fast.

The stars reeled, but settled into steadiness as the stop watch showed three seconds. Neelan felt a glow. A perfect hairpin turn in twelve hundred million miles. At that rate he could be within sight of Earth's sun in another twenty-two days. No, wait!

Neelan shook his head. It wasn't as simple as that. He couldn't possibly subject himself again to the kind of pressure that had held him unconscious so long.

After some mental estimations, he set the drive lever at three quarters reverse—and waited. Logic said he had recovered consciousness soon after the pressure stopped; so—

Two hours passed, and nothing happened. His head kept drooping, his eyes closing. But the blow of deceleration didn't come.

A thought occurred to him; and he went back warily to look at the engines. But the meters showed a seventy-five-percent drain of power. The outer hide of the drive shaft felt natural: cold and—tense.

It was disturbingly obvious that he had been long in the supernormal force field that had nullified the remnants of his inertia, much longer than seemed reasonable or safe.

Uneasily expectant, Neelan finally went to sleep on one of the couches.

There was a jar that shook his bones. Neelan wakened with a start, but he calmed swiftly as he felt the steady pressure on his body. It was strong, like the current of a very heavy wind; but now that he had taken the first shock, it was bearable.

The only question was: where? At what point of speed had he emerged from the mysterious inertialess field, back into the world of deceleration pressures.

He ached to leap up, and examine the speedometer, but instead held himself where he was; he felt acutely conscious of the tingling readjustments going on in his body, the electronic, atomic, molecular, neural, muscular readjustments.

In Carew's and his old-type ship, he had always waited an hour before moving, but—

He gave himself thirty minutes, and every instant he grew more conscious that he was alive and well. Somehow, that seemed to have more meaning now. He thought of Gil, but that left him cold and unemotional. For there was nothing to do about Gil except cover

the years of miles that still intervened between them.

Memory of the empress narrowed Neelan's eyes. It struck him with abrupt steely clarity that one of his great weaknesses throughout his terrible fight against her had been the fact that he did not know the secret of the stellar drive. Therefore—

Neelan went to the control board first, and peered into the 'stats. But there was nothing there. The calendar said August 29th, 11:03 p. m.; and the speedometer was down to three hundred fifty million miles—he'd do the figuring on that later.

His conviction grew that things were at last on the way to being done, but the thought also brought a touch of caution. Better lie down a while, then eat, and not till then cut off the drive, take it apart and examine that superb instrument of speed.

The secret of the drive first startled, then depressed Neelan. It was a marvelous little idea, involving electronic rearrangements, but in essence it was nothing but a variation of several very old discoveries.

"Why," he thought wearily, "if the right combination of men and knowledges had got together, we could have had this at least four thousand years ago."

As so many others had done before them, Kershaw and Gil had resurrected an old, discarded form of Nature's handiwork. Neelan sighed, as he compared the atom structure before him to the mathematical formula promulgated nearly five thousand years before.

Nature had simply not planned for such a being as man, and had accordingly long since rid herself of all the unstabler forms; and practically the entire science of atomic energy had been one long struggle of rediscovery.

The formula proved that there were several billion billion variations, and provided, by the addition of an absolute transformation, an exact mathematical description of each variation.

There was even an institute that, Neelan recalled, had set itself to start at the lower limit with the intention of working doggedly through the entire range of variations.

They would reach the interstellar drive, he estimated grimly, in about four million nine hundred thousand million years. By that time the energies of the solar system would have decayed, the glory of the sun would be dimmed and the Earth, tideless and inert, would no longer tolerate the race which for a moment had disturbed its solitude.

The mental picture brought Neelan melancholy. He finished replacing the plates, and again set the drive at three quarters reverse.

His gloom grew as he sat staring into the 'stats. Everything seemed very far away, very far.

Against this background of immensity, how futile seemed the blind, mothlike fluttering of men toward the light of ultimate truth. The very violence of the struggle to suppress, and, conversely, to force into the open, the secret of the stellar drive, seemed to take on meaningless qualities. In the face of the terrific night of the universe, it didn't really matter.

Suddenly, it was incredible that such a woman existed as the Imperial Innelda Isher, with her almost mindless will to safeguard the power of her clan. It—

Neelan shook himself consciously, and stared out at the fixed stars. The conviction that came to him finally was darkly simple:

The days and the hours of flight were going to be long for one man alone in vastness.

His velocity declined something less than twelve million miles a second during the next twenty-four hours. Neelan frowned over that. And a faint fear came that the time the ship had been in the inertialess space had introduced an element of dangerous uncertainty. Still—

At his present deceleration, the lifeboat should come to a full stop in about thirty-two days, at most.

The third day also showed a reduction of more than eleven million miles a second. The hollow feeling went slowly out of Neelan's stomach as he watched the average of deceleration develop steadily hour by dragging hour.

Increasingly clear now was the fact that above three hundred fifty million miles a second, increases and decreases in speed must be governed by far more potent laws than they were here. Four times as much at least, though there seemed to be an upper limit.

The figure of his present speed, and the decline thereof, constituted meat into which he could sink his mental teeth; and by the thirty-first day, he had his calculations down to a fine point of accuracy.

With a grim satisfaction, Neelan watched the light on the speedometer grow darker, darker, until the beam of force quivered gently—and stopped. A glowing sign flashed on the instrument board:

DRIVE OFF. SHIP AT REST.

His estimations were one hour and nineteen minutes askew, a bull's-eye at the distance he had flown. The only thing was—

His satisfaction dimmed somewhat. Neelan frowned at the 'stat plates, as he manipulated the telescope adjustors and the automatic estimators. The only thing was, the nearest sun showed approximately two light years to his left, and its prismatic register showed little relation to Earth's Sol.

It was too yellow. It was the color of a deep-toned egg; and the effect grew as his machine plunged toward it. At nine hundred million miles, it was a jaundiced ball of fire, whose ochered like no earthly eye had ever gazed on before him. That wouldn't have mattered so much except that the star seemed to have no recognizable distance connection with any of the nearer stars.

It was seven light years from a faint red sun almost straight beyond it. There was a blue star seventeen plus years to the right. The third nearest star in any direction that he could discover was more than forty light years beyond the blue sun. Nevertheless—

It was better to check thoroughly. Space was ablaze; and it would be easy to miss Sol or Centaurus looking at the heavens from his present strange position.

Three planets swam into his ken, but, as with the stars, Neelan knew there could be others. The telescope adjustors on so small a ship simply had not the capacity for first-class magnification.

After critical examination, he selected a planet about eighty million miles from the Sun, seven thousand miles in diameter, which seemed to have an atmosphere.

It did. The lifeboat settled through a thick cushion of air, out over a sea; and then circled slowly back under his guiding fingers, toward a continent. Neelan came down within sight of the sea beside a virgin forest.

Air pressure was seventeen pounds, oxygen content thirty percent, and nothing poisonous in deadly quantities. Neelan ventured forth gingerly and stood on a carpet of thick. gray grass. A faint wind was blowing, but there was a great silence around him, broken only by the lapping of water on the nearby sandy beach.

He took a swim; and then watched the yellow sun sink toward the horizon of heaving waters. Night came suddenly, and brought with it a loneliness more intense than any he had known in space.

All night long, the sea mourned on the lifeless beach the eternal dirge of water meeting land. And, in the morning, as he soared up to continue his journey, the planet spun behind him emptily through the dark waste around its sun, one more uninhabited hostage to the fortune of worlds that Nature had spawned in her desperate attempt to create intelligence.

He had known, of course. Yellower was that planet's sun than old Sol would ever be. Yellow and strange and alien.

The blue sun hurtled nearer; and the hope that it would be Sirius died only when the 'stats confirmed definitely that there was no companion star.

There *were* planets; a dozen pale orbs stood out in the first telescopic sweep, but they only emphasized the desperate reality, the deadly fact:

He was lost—lost in a night that grew more meaningless every hour. He—

There was a jar that shook every vibrating plate in the lifeboat. The little craft spun like driftwood in a whirlpool. It was the chair that saved Neelan, the all-purpose chair. Light as a thistledown, it twisted as fast as the ship, holding him always downward, steady; and with him the entire control board.

Almost instantly, he forgot that because—

The surrounding space was alive with monstrously large torpedo-shaped ships. Every 'stat showed swarms of the mile-long things; and each stupendous machine was drawn up as part of a long line that completely enveloped his small craft.

Out of that mass of machines came a thought. It boiled into the control room like an atomic gas bubble. It was so strong that, for an instant, it had no coherency; and, even when it did, it was a long moment before Neelan's staggered mind grasped that the titanic thought was not for him, but *about* him.

"—an inhabitant of . . . ! ! !—meaningless. . . . Intelligence type nine hundred minus. . . . Study value Tension 1. . . . Shall it be destroyed?"

The mad, private thought that came to Neelan, as he sat there with tottering reason, expecting merciless death, was that this was the end of all that desperate fighting on Earth to suppress the interstellar drive.

It didn't matter. It was too late. Man was too slow by a measureless time. Greater beings had long since grasped all of the universe that they desired; and the rest would be doled out according to their savage will.

Too late, too late—

XIV.

It could have been one minute or many that passed, as Neelan sat there. When he finally began to twist up from his funk, he had the grisly sensation of emerging from an abyss of fear.

It was startling finally to realize that he wasn't dead.

Like a fuel-fed flame, his will to live surged up into a bright pattern of purpose: His gaze narrowed on the 'stat plates; like windows they were, through which he peered out at the mass of great spaceships that surrounded him.

Almost, his terrible fear returned. There were so many, *too* many; the implications of their presence was too deadly. Only—

He was still alive.

The conscious, second thought of life galvanized him. His fingers flashed toward the controls. In a single, synchronized twist of effort, he glanced along the sighting guides, aiming at an opening between two of the massive vessels, plunged home the adjustor, waited an instant for the lifeboat to swing into line—and deliberately snapped the white accelerator far over.

Their control of him—he thought flashingly—would be a balance of forces based upon his partial acceleration, which would be overcome by putting on full—

His mind made a dreadful pause, for there was darkness, a gulf of darkness, not mental, but— With an indrawn gasp, Neelan tore the drive out of gear.

He recalled after a blank moment that there had been the faintest tug of movement. Now, there was nothing—no ships, no stars, not a sign of the fiery ball that had been the blue sun.

Nothing at all. It wasn't that the 'stats were blank. They were on. But they registered blackness unqualified by a single streak of light.

After a moment, Neelan touched a button on the instrument board; almost immediately a word glowed up at him. It said simply:

METAL

Metal! Surrounded by metal. That meant—

He was inside one of the mile-long alien ships.

He was *inside* one of the alien ships!

Just how it had been done was a mystery, but if the Weapon Makers on Earth had a vibratory transmission system, whereby material objects could be sent through walls and over distances, then the absorption of his lifeboat into the hold of a bigger machine was well within the realm of possibility. It—

Abruptly, he felt torn, his whole being wrenched by a soaring comprehension of his situation. He sank back against the chair, weakened and exhausted by the intensity of his emotions. After a while, steadier thought came.

He was obviously a prisoner, and in due course would learn his fate.

He settled back and waited. But the minutes ticked away with no sign from his captors. At last, hunger touched him. He turned on the cooking tubes and prepared a meal. It was while he was eating that he began to question his instinctive policy of sitting tight, awaiting developments.

After all, these were intelligent beings and—

His mind poised there, startled once more, and on a sharper, more stunning plane. Intelligent! The word didn't fit. It had no meaning for what was here.

The reality was simply not graspable by the human brain. Here were intellects so stupendous, a science development so great, that—

He had to give it up, had to, because his brain started to spin, his nerves tensed. With a gasp, he fought back to his own logic:

Actually, there was only one thing that counted here: They were letting him live. Which must mean that he had been found of some value. That they wanted—something.

Neelan finished eating, and then slowly climbed into a spacesuit. He felt strangely cold, but very determined.

Ready finally, he opened the air lock, stood for a moment thinking bleakly of how far he was from rescuing Gil—and then stepped gingerly down and out.

There was no gravity; and so Neelan floated down under the impetus of a push on the lock. His flashlight blazed an intense path downward, revealing a flat plain of metal, with walls sharply delineated in the near distance, walls with doors in them.

The picture was so normal, so ordinary, that the weight of anxiety in his mind eased radically. He need only try all the doors, and, if so much as one opened, follow through. His plan was as simple as that.

The first door opened effortlessly.

After a moment, his nervous reflexes caught up with his staggered mind; and he hissed with wonder.

He was staring down at a city from a height of about two miles. The city glittered and shone from a very blaze of hidden light, and it was set in a garden of trees and things in bloom; and beyond was green countryside, alive with a profusion of brush and meadows, and sparkling streams.

The whole curved gently upward into a haze of distance on the three sides that he could see.

Except for the obviously limited horizon, it could have been Earth.

The second tremendous shock struck Neelan at that point. A city, he thought, an Earth-like city in a ship so big that—

His mind couldn't grasp it. His brain throbbed like a tuning fork. The spaceship, which had seemed a mile long, was actually at least fifty, and it was cruising through space with several hundred of its kind, each machine the size of a planetoid, and manned by superbeings.

With an effort, Neelan caught his mind and remembered his purpose. He held his thought on a cold, practical level, as he mentally estimated the size of the largest door; and then went back to the lifeboat.

There was a moment of doubt as to whether the mysterious beings would permit it to move; it all depended on what they wanted him to do. Doubt ended as the little machine slipped gently forward, cleared the door by several feet, and landed a few moments later on the outskirts of the city.

Safely landed, he sat there, letting the unpleasant thrill tingle along his nerves, the realization that this was what they wanted.

There was no doubt at all that some over-all purpose was being worked on him; and, while precautions seemed ridiculous, nevertheless—

Grimly, he tested the atmosphere. Air pressure was slightly over fourteen pounds, oxygen content was nineteen percent, nitrogen seventy-nine percent, temperature seventy-four, gravitational pressure 1 G and—

He stopped there, trembling with a deadly surmise. Earth, he thought, such a perfect imitation that— It couldn't be anything but an inhumanly marvelous set-up, a structure created in a flash for—him.

They wanted something.

In spite of that earlier, negative assessment of him, something, some quality in him had changed their great minds—and now they were watching.

Neelan peered uneasily into his 'stats, but all he could see were empty streets that stretched on every side, a deserted city.

With a deliberate purpose, Neelan divested himself of his spacesuit. The possibility of resistance simply did not exist. Creatures who could casually, in minutes, recreate an Earth setting for him had him, *had* him.

He stepped out of the lifeboat into a great silence.

There was not a breeze, not a movement The nearby trees stood in the deathly quiet, their leaves curled stiffly, their branches steady It was like a scene under glass, a garden in a bottle, and he the tiny figure standing rigidly

Only he wasn't going to stand there.

The first building was a white, glistening thing, wide and long, but not very high. He could hear the doorbell *brrr*ing faintly inside, as he pressed the activator; his knock made a hollow sound; and after a while he tried the latch.

The door opened, and revealed without any preliminary of vestibule or hallway what might have been a furnished bedroom on Earth. It was large and it was tastefully decorated and, what was more, it looked familiar.

Frowning, Neelan walked inside, and stood trying to comprehend the essence of that familiarity. He was still standing there when it happened.

He was no longer alone. A woman and a man were standing beside the bed, bending over a man who lay under the quilts.

He could see the face of the man in the bed clearly from where he stood, a contorted, pain-twisted face and—

Neelan's brain writhed. A hoarse cry escaped his lips. His knees threatened to give as he ran. He kept stumbling, then picking himself up. He reached the door in a physical haze, and half fell across the threshold onto the walk beyond.

He lay there striving to force understanding into a head that seemed too small for the impossible thing it must comprehend.

There was not a shadow of doubt in his whirling mind as to what he had seen. The man and the woman bending over the figure in the bed were Zeydel and the Empress Isher.

The room was the palace room where he had been tortured nearly two months ago.

The man in the bed was—himself.

After a moment, Neelan felt a measure of strength and sanity creep back into his limbs and into the rigid muscles that was his brain.

He climbed shakily to his feet, and the strong light around him, the city, the trees, quickened his recovery. A figment, he thought then, tautly, a scene out of his memory re-created in some fashion.

But why that one? Why any? Why? Why?

He knew after a shuddering moment what he must do. He felt repelled, almost revolted; he forced himself to peer through the door. The room was empty—and that brought a relief so enormous that he gulped.

He walked swiftly into the city, and did not slow until the silence and the desertedness closed again around him, a very pall of unnatural environment. He thought finally, blankly:

It was no use letting it get him. He was here; he must face every faction of strangeness that his unseen captors had in store for him.

They weren't friendly; that was certain. The suggestion that he be killed had come too swiftly, too easily—and death's delay must be rooted in some ice-cold purpose that might at any second lose their abnormal interest. Whereupon the end would come.

Damn it, let it come. Force issues—anything was better than this silence.

Neelan turned abruptly into a small skyscraper, a thirty-story marble structure. The imposing door opened like the one in the first building he had entered, not into an anteroom, but directly into a room.

It was small, all metal; there was a control

board and a multipurpose chair. The resemblance to his own lifeboat interior was so startling that he—accepted.

Steely cold, Neelan stood there, trying to pin down from the appearance of the ship what moment of his life, what exact event was being duplicated here.

His greater alertness stood him in good stead. The flashing arrival out of nothingness into solid existence of an exact replica of himself, clothes and all, in the control chair only jarred his mind much as a nearby explosion might, without actually shattering him.

He forced himself to stand staring, feeling the icy fingers crawling up his spine, forcing himself finally to walk over.

He expected the body to vanish as he approached. But it didn't. He expected his hand to pass through the other version of himself. *But it didn't.* The feel of the clothes was unmistakable; and the flesh of the face was warm with life as he touched it with his fingers.

The Neelan who was in the chair paid no attention, but continued to stare fixedly at the general 'stat plate.

Neelan would have had to turn partially about to follow that gaze, and now that he was concentrating on the body, his mind was a steel bar of purpose. One thing at a time, he thought relentlessly.

He braced himself. He caught his other self by the shoulders, and, bringing all his great strength into play, tried to tear the replica out of the chair.

It didn't budge; not by a flicker of a muscle or a nerve did it show awareness. The eyes continued to stare intently at the 'stat plate; the head was slightly, stiffly bent forward. Slowly, Neelan faced in the same direction.

He sighed when he saw what was on the plate: the empress' passionately anxious face. So that was what this scene was: a re-enactment of the Imperial Innelda's final offer to him, without sound effects, without her vibrant voice urging him to what she considered sanity. How little she had realized the blood urgency that was driving him.

The sudden thought of Gil brought a great sadness. Poor Gil! After fifty-five days in that hell of desert and storm, there wouldn't be, couldn't be, much hope.

Neelan had closed his eyes in that brief anguish of thought; he opened them with a start as fine, hot sand laced against his face—opened them onto madness.

He was no longer in the control room, or in a building. There was no city. He twisted in a spasm of muscular reaction and realized that he was lying on a flat red desert under an enormous bulging sun. Far to the left, through a thick haze of dust, was another sun, much smaller, but looking almost the color of blood in that world of powdered sand.

Some men lay nearby on the sand. One of them turned weakly, a big, fine-looking man, whose lips moved. There was no sound, but curiously the man's turning the way he did brought into Neelan's line of vision boxes, crates, metal things. He recognized a water-making machine, a food case and— The rest blurred as Neelan's glance fixed again on the man himself.

"Gil!" Neelan shrieked, "Gil, *Gil*, GIL!"

"Dan!" It seemed to come from far away, oh, so far away; and it was more a wisp of thought in his mind than a sound. It was a tired sigh that bridged the great night. It began again, faint, far-away but clear—and directed at Neelan: "Dan, you poor mug, where are you? Dan, how are you doing this? I don't feel that you're close. . . . Dan, I'm a sick man, dying. We're on a freak planet that's going to pass close to one of the two Centauri giants. The storms will grow worse, hotter. We— Oh, God!"

The break was so sharp, it hurt like fire. It was like an overstretched elastic—giving. Countless light years rushed inexorably to fill the gap.

Just when the transformation came, Neelan wasn't sure. His first awareness was that he was no longer lying on sand or metal. But for some reason, that was only dimly puzzling.

His mind, every cell in his being, was wrapped up in thought of Gil and of the miracle that had been wrought; somehow, these mighty captors of his had intensified the flimsy bond between himself and Gil beyond all previously conceivable limits, and made a thought connection across light centuries—an incredible, instantaneous connection. It—

Funny, it was dark, a blue-dark all around him. With a savage frown, Neelan lifted himself from his prostrate position and fell down again, as his hands went through the floor.

In astounded amazement, he saw that there was a blue haze of semidark space below him. He reared up instinctively, and this time,

gasping, he realized how great was the strangeness. The metal floor was gone, and the sand —or had that been a crazy illusion of the minute of sensory oneness with Gil on his remote hell of a planet?

Panic struck like a physical blow because—instead of the floor, there was a fine crisscross of wires like the rigging in the ships that sailed the seas of Earth in olden days, like the web of some nightmare-sized spider, like—

His thought paused in awful contemplation A monstrous chill spread down his spine—*Like a spider's web.*

It was.

In one frantic jerk of tortured muscles, Neelan whipped over onto his back, and lay there like a collapsed sack. The city *was* gone, and the brilliant sky. In its place—

Unearthly, dark, dark-blue world, and webs —miles and miles of webs. They reared up toward the remote ceiling, invisible in that dimness. They spread out in all directions, fading into the seminight like things of some hideous nether world; and mercifully they were not inhabited at first.

He had time to brace his brain for the most terrible shock that its highly trained structure would ever have to face. He had time to grasp that this was the real interior of the ship, and that there *must* be inhabitants.

Far above him, there was suddenly a flicker of movement. Neelan lay rigid and cold, becoming colder with each passing second. Spiders— So, a bunch of bloated spiders were Nature's prize package, the supreme intelligence of the ages, rulers of the universe.

The thought seemed to sag in his mind a very long time. He grew aware finally that a faint light was being played over him from some hidden source, and then—

A thunderbolt of mind vibrations rocked every cell in his brain, and sent intense repercussions roaring down along his nerves. In a moment, his whole body was swaying like a tree in a strong wind to that mighty chorus:

"—examination negative. . . . No physical connection—"

"But the tensions were augmentable by energy. The connection was contrived with his brother across -xxx?!! distance."

"—no physical connection!" Coldly.

"I was merely expressing amazement, mighty -xx—!! (meaningless name). Here is undoubtedly a phenomenon closely related to the strange emotional behavior of this race. Let us ask him—"

"MAN!"

Neelan's brain, already straining under the buckling weight of those enormous thoughts, cringed before that direct and monstrous wave.

"Yes?"

He spoke aloud. His voice made a feeble sound against the blue-dark vastness, and was swallowed instantly by the silence.

"MAN, WHY DO YOU WISH TO RESCUE YOUR BROTHER?"

Neelan shrank from the roar, shrank hard back against the web. Blankness came; and for a moment the question seemed the most meaningless he had ever heard; then—

Why rescue Gil, he thought in stark puzzlement. Why, because Gil and he had been pals as youngsters, because . . . because—damn it all, because Gil was his brother and—

Before he could so much as begin to explain the ultrasimple elements of human nature involved, the titanic thunder raged down again at his mind:

"MAN, WHY DID YOU REFUSE THE TREASURE THE FEMALE OFFERED? MAN, WHY DID YOU BEAR THE TORTURE WHEN IT WOULD HAVE BEEN TO YOUR ADVANTAGE TO YIELD?"

Neelan shook himself dazedly, but in spite of the tattered state of his mind, a great light was beginning to streak through. These spiders were trying to understand man's emotional nature *without having themselves a capacity for emotion.*

He felt an abrupt and enormous pity. There was no other word to describe that surge of sensation. For here were blind things asking to have color explained to them, stone-deaf creatures being given a definition of sound. The principle was overwhelmingly the same.

His pity transformed into contempt, a vast and stinging contempt. He recognized it for what it was: the kind of contempt that man from time immemorial has felt for lesser creatures.

These poor, brain-heavy botches of Nature, what a drab existence must be theirs in that bleak and terrible mental realm where they had their consciousnesses. They—

Above him, the monstrous clamor of thought cut across his personal thought with a mind-shattering violence. This time it was not directed at him, but the very first blast stunned Neelan with its import:

"—REGRETTABLE THAT HIS

BROTHER DIED, BREAKING THE CONNECTION—"

"—THAT NEED BE NO DETERRENT. WE ARE ON THE RIGHT TRACK. A MAJOR OPERATION IS IN ORDER—"

"X—XX?!X PROCEED—AT ONCE."

The funny thing was, Neelan needed no thought. Gil dead—operation— His mind jumped all the in-between gaps straight to action.

His hand flashed up to the pencil gun the empress had given him to kill Greer. He jerked the tiny weapon hard against the side of his head. The two explosions made one, drawn-out, shattering sound.

XV.

The ruins consisted of a break-through into a main corridor of the palace, and of gaping energy holes along the corridor itself where the fighting had taken place.

Beside her, Prince del Curtin said anxiously, "Hadn't you better get some sleep, your majesty? It's after four. And, as the Weapon Makers have not answered our repeated calls, there is nothing more that can be done tonight about your husban . . . about Captain Hedrock."

She waved him away, vaguely. There was a thought in her mind, a thought so sharp that it seemed to have physical qualities; so painful that every moment it existed was a bit of hell:

She must get him back; no matter what the sacrifice, she must have Hedrock back.

Strange, she thought finally, how she who had been so cold and steely and calculating, so almost inhumanly imperial—strange how in the ultimate issue she should prove to be just like all women. As if the first shock of committing herself to one man literally changed the chemistry of her body.

When Hedrock had been announced at eight o'clock the night before, her mind was already made up. She thought of her decision as intellectual, product of the need for an Isher heir.

Actually, of course, she had never thought of anyone but Hedrock as the father. In the first audience she had granted him six months before, he had coolly announced that he had come to the palace for the sole purpose of marrying her. That amused, then angered, then enraged her, but it put him in the special category as the only man who had ever asked for her hand.

The psychology involved had always been plain; and she sometimes felt acutely the unfairness of the situation for other men who might have the ambition or desire. Court etiquette forbade that they mention the subject. The tradition was that she must ask. She never had.

In the final issue she had thought only of the man who had actually proposed; and, at eight o'clock he had come in response to her urgent call and agreed instantly to an immediate marriage.

The ceremony had been simple but public—public in that she took her vows before the telestat, so that all the world might see her and hear her words.

Hedrock had not appeared on the telestat. His name was not mentioned. He was referred to as "the distinguished officer who has won her majesty's esteem." He was a consort only, and as such must remain in the background.

Only the Ishers mattered. The men and women they married remained private persons. That was the law; and she had never thought there was anything wrong with it. She didn't now, but for nearly five hours she had been wife; and during those hours her mind and metabolism adjusted. The thoughts that came had no relation to any she had ever had before.

Curious thoughts about how she must now bear the chosen man's children, and mother them, and of how the palace must be transformed spiritually so that children could live there.

Nearly five hours; and then she told him of her appointment to meet Edward Gonish; and went off with the memory of the odd expression in his eyes—and now this ruin, and the gathering realization that Hedrock was gone, snatched irresistibly from the heart of her empire by her old enemies.

She grew aware that someone, the court chancellor, was recounting a list of precautions that had been taken to prevent leakage of the news that the palace had been attacked.

No reports had been permitted to be broadcast; every witness was being sworn to silence under strict penalties. By dawn, the repair work would be completed without trace, and thereafter any story that did come out would seem a barefaced rumor, to be laughed at, and ridiculed.

It had been, she realized, fast, effective suppression, immensely important. The prestige of the House of Isher might have been dealt a damaging blow. But the very success of the censorship made it all remote, secondary. There would be rewards and honors to dole out, but the only thing that mattered now was—

She must get him back.

Slowly, she emerged from her dark mood. Her party, she saw with a vague surprise, was clear now of the muttering repair machines, and was moving along the wrecked corridor.

Her mind withdrew further from itself; grew more intent on her surroundings. She thought: the important thing was to find out what had happened, then act.

Frowning from her new purpose, she examined the mutilated walls of the hallway. Her green eyes flashed. She said with a semblance of her old sardonicism:

"From the slant of the ray burns, our side seems to have done all the damage, except for the initial breach in the main wall."

One of the officers nodded grimly:

"They were after Captain Hedrock only. They used a peculiar paralyzing ray that toppled our soldiers over like ninepins. The men are still recovering with no harmful effects visible, much as General Grall did after Captain Hedrock seemed to cause him to die from heart failure at lunch the other day."

"But what happened?" she demanded sharply. "Bring me someone who saw everything? Was Captain Hedrock asleep when the attack came?"

"No—" The officer spoke cautiously. "No, your majesty, he was down in the tombs."

"*Where?*"

The soldier looked unhappy. "Your majesty, as soon as you and your party left the palace, Captain Hed . . . your consor—"

She said impatiently, "Call him Prince Hedrock, please."

"Thank you, majesty. Prince Hedrock went down in the tombs to one of the old storerooms, removed part of one wall—"

"He what? But go on!"

"Yes, your majesty. Naturally, in view of his new position, our guards gave him every assistance in removing the section of metal wall and transporting it to the elevators, and up to this corridor."

"Naturally."

"The soldiers who reported to me said the wall section was weightless but it offered some quality of innate resistance to movement. It was about two feet wide and six and a half feet long; and when Cap . . . Prince Hedrock stepped through it and vanished, and then came back, it—"

"When he what? Colonel, what are you talking about?"

The officer bowed. "I regret my confusion, your majesty. I did not see all of this, but I have pieced together varied accounts; my mind of course persists in regarding as more important what I myself saw. I actually saw him enter the detached wall shield, disappear, and return a minute later."

For a moment, the empress stood there, her mind almost a blank. There was consciousness in her that she would get the story eventually, but right now it seemed beyond her reach, buried deep in a muddle of phrases that had no meaning in themselves.

Captain Hedrock had gone to the tombs deep below the palace, removed a section of wall and—and then what?

She put the question incisively; and the colonel said, "And then, majesty, he brought it up to the palace proper and stood waiting."

"This was before the attack?"

The officer shook his head. "During it. He was still in the tombs when the wall was breached by the concentrated fire of the Weapon Shop warships. I warned him personally in my capacity as chief of the palace guards of what was happening. The warning only made him speed his return to the surface, where he was captured."

Briefly again, she felt helpless. It wasn't that the description wasn't clear enough. It was simply that it made no sense.

Hedrock must have known something was going to happen, because he had gone purposefully down into the tombs immediately after her own departure to meet Edward Gonish. That part was all right. It seemed to indicate a plan.

The dumfounding thing was that he had come up and, right before the eyes of the Weapon Shop forces and the palace guards, had apparently used the wall section to transmit himself somewhere, as the Weapon Makers were reputed to be able to do. But, instead of staying away, he had come back—insanely, he had come back, and permitted the Weapon Makers to take him prisoner.

She said finally, hopelessly, "What happened to the section of wall?"

"It burned up right after Prince Hedrock warned the Weapon Shop councilor, Peter Cadron, who led the attackers."

"Warned—" She turned to Del Curtin. "Prince, perhaps you can obtain a coherent story. I'm lost."

The prince said quietly, "We're all tired your majesty. Colonel Nison has been up all night." He turned to the flushing officer:

"Colonel, as I understand it, guns from Weapon Shop warships breached the gap in the outer wall at the end of the corridor. Then one of the ships drew alongside, and sent men into the corridor, men who were immune to the fire of our troops—is that right?"

"Absolutely, sir."

"They were led by Peter Cadron of the Weapon Makers' council, and when they reached a certain point in the corridor, there was Prince Hedrock standing waiting. He had brought some kind of electronic plate or shield, six feet by two feet, from a hiding place in the tombs. He stood behind it, waited until everybody could see his action, then stepped *into* the plate, vanishing as he did so.

"The plate continued to stand there, apparently held in place from the other side; this would account for the resistance it offered when the soldiers carried it up from the tombs for Prince Hedrock. A minute after his disappearance, Prince Hedrock stepped back out of the shield, and, facing the Weapon Shop men, warned Peter Cadron."

"That is correct, sir."

"What was the warning?"

The officer said steadily, "He asked Councilor Cadron if he recalled the Weapon Shop laws forbidding any interference, for any reason, with the seat of Imperial Government, and warned him that the entire Weapon Shop council would regret its high-handed action, and that it would be taught to remember that it is but one of two facets of Isher civilization."

"He said *that!*" Her voice was eager, her eyes ablaze. She whirled on Del Curtin. "Prince, did you hear that?"

The prince bowed, then turned back to Colonel Nison, "My last question is this: In your opinion did Prince Hedrock give any evidence of being able to fulfill his threat against the Weapon Makers?"

"None, sir. I could have shot him myself from where I stood. Physically he was, and I presume is, completely in their power."

"Thank you," said the prince. "That is all."

There remained the fact that she must rescue Captain Hedrock.

She paced up and down, up and down. Dawn came, a gray muggy light that peered through the huge windows of her office apartment shedding dirty pools of light in its shadowy corners, and making no impression at all where there were artificial lights.

She saw that Prince del Curtin was watching her anxiously, and she slowed her rapid pacing, said:

"I can't believe it. I can't believe that Captain Hedrock would say things out of bravado. It is possible that there exists some

organization of which we know nothing. In fact—"

She faced him wildly. "Prince," she said in an intense voice, "he *told* me that he was not, never had been, never would be a Weapon Shop man."

Del Curtin was frowning. "Innelda," he said pityingly, "you are exciting yourself uselessly. There can't be anything. Human beings, being what they are, sooner or later manifest any power they may have. That is a law as fixed as Einstenian Gravitation. If such an organization existed, we would have known of it."

"We have missed the clues. Don't you see?" Her voice trembled with the desperation of her thought. "He came to marry me. And he won there. That shows the caliber of the organization. And what about the section of wall that he removed from the storeroom in the tombs—how did that get there? Explain that."

"Surely," said the prince in a stately voice, "the Ishers cannot but be mortal enemies of any secret organization that may exist!"

"The Ishers," said the woman icily, "are learning that they are human beings as well as rulers, and that the world is a big place, too big for one mind or group of minds to comprehend in its entirety."

They stared at each other, two people whose nerves were frayed to the uttermost. It was the empress who recovered first. She said wearily:

"It seems incredible, prince, that you and I who have been almost truly brother and sister, should be on the verge of a quarrel. I'm sorry."

She came forward and placed her hand on his. He took it and kissed it; there were tears in his eyes as he straightened.

"Your majesty," he said huskily. "I beg your forgiveness. I should have remembered the strain you are undergoing. You have but to command me. We have power; a billion men will spring to arms at your command. We can threaten the Weapon Makers with a generation of war. We can destroy any man who has dealings with them. We can—"

She shook her head hopelessly. "My dear, you do not realize what you are saying. This is an age that would normally be revolutionary. The necessary disorganized mental outlook exists. The evils are there: selfish administration, corrupt courts, and rapacious industry; every class contributes its own brand of amoral and immoral attributes, which are beyond the control of any individual. Life itself is in the driver's seat; we're only passengers.

"So far our marvelous science, the immensity of machine production, the intricate and superb organization of law, and the existence of the Weapon Makers as a stabilizing influence have prevented an open explosion, but for a generation at least, we mustn't rock the boat.

"I am counting particularly upon a new method of mind training recently released by the Weapon Shops, which strengthens moral functions as well as performing everything that other methods are noted for.

"As soon as we get rid of the menace of the giant organization, we—"

She stopped because of the startled expression that flashed into the prince's lean face; her own eyes widened. She whispered:

"It's impossible. He . . . can't . . . be . . . the giant. Wait . . . wait, don't say anything. We can prove it all in a minute—"

She crossed swiftly to her personal 'stat, said in a tired, flat voice:

"Bring the prisoner, Edward Gonish, to my office."

The No-man answered her question steadily, "I don't understand the electronic shield through which you say he disappeared, but yes, your majesty, Captain Hedrock is one of the giants or"—he hesitated, then added slowly —"or, and this thought has just come, *the* giant."

The signficance of the hesitation was lost on her. She swayed wearily. "But why should he want to marry the woman whose empire he is trying to ruin?"

"Madam"—Gonish spoke quietly—"it was only two days ago that we discovered Captain Hedrock was deceiving the Weapon Shops. It was the accidental disclosure of his absolutely superior intelligence that proved him to be a man to whom the Isher line and the Weapon Makers are but a means to an end. What that end is, I am only beginning to suspect. If you will answer a few questions, I shall be able to tell you in a few minutes who Captain Hedrock is—or rather was!

"I say 'was' of necessity. I regret to say that the intention of the Weapon Makers council was to question him in a specially constructed room; then immediately execute him."

Silence settled like a weight over the room. Actually, the shock, the capacity of her body for shock, was gone. She stood, cold and numb, without thought, waiting.

It struck her finally what a distinguished-looking man the No-man was. She studied him absently, and then utterly forgot his personal appearance as he began to speak:

"I have, of course, all the available information about Captain Hedrock that is known to the Weapon Makers. My search led into very unusual byways, that seemed meaningless. But if similar curious paths exist in the Isher annals, as I believe they do, then the section of wall Hedrock removed from the tombs, is only the final clue— But let me ask:

"Is there any picture, film, *any* physical record available of the husband of the Empress Ganeel?"

"Why—no!" The breathlessness was accompanied by a dizziness, almost a spinning of her brain; for her mind had made an impossible leap. She spoke blurrily, "Mr. Gonish, he said that, except for my dark hair, I reminded him of Ganeel."

The No-man bowed gravely. "Your majesty, I see you have already plunged into these strange waters. I want you to run your mind back and *back* through the history of your line, and remember—whose pictorial record is missing, husband or emperor?"

"They're mostly husbands of empresses," she said slowly, steadily. "That is how the tradition began, that consorts should remain in the background." She frowned. "So far as I know there is only one emperor, of whom picture, portrait or film record is not available. That one is understandable. As the first of the line, he—"

She stopped. She stared at Gonish. "Are you crazy?" she said. "Are you *crazy?*"

The No-man shook his head. "You may now regard it as a full intuition. You know what my training is: I take a fact here and there, and as soon as I have approximately ten percent, the answer comes automatically. They call it intuition, but actually it is simply the ability of the brain to co-ordinate tens of thousands of facts in a flash, and to logicalize any gaps that may exist.

"One of the facts in this case is that there are no less than twenty-seven important pictorial records missing in the history of Weapon Shops. I concentrated my attention on the writings of the men in question, and the similarity of mental outlook, the breadth of intellect, was unmistakable."

He finished, "You may or may not know it, but just as the first and greatest of the Ishers is only a name, so our founder, Walter S. de Lany, is a name without a face."

"But who is he?" said Prince del Curtin, blankly. "Apparently, somewhere along the line the race of man bred an immortal and—"

"Not bred. It must have been artificial. Had it been natural, it would have repeated many times in these centuries. And it must have been accidental, and unrepeatable, because everything the man has ever said or done, shows an immense and passionate interest in the welfare of the race."

"But," said the prince, "what is he trying to do? Why did he marry Innelda?"

For a moment, Gonish was silent. He stared at the woman, and she returned his gaze, the color in her cheeks high and brilliant. Finally, she nodded, and Gonish said gently:

"For one thing, he has tried to keep the Isher strain *Isher*. He believes in his own blood, and rightly so, as history has proven. For instance, you two are only remotely Isher. Your blood is so diluted that your kinship to Captain Hedrock can hardly be called a relation.

"Hedrock remarked to me once that the Isher emperors tended to marry brilliant and somewhat unstable women, and that this periodically endangered the family. It was the empresses, he said, who always saved the line by marrying steady, sober, able men. They—"

"Suppose—" The woman did not think of her words as an interruption; the thought came; she spoke it. "Suppose we offered to trade you for him?"

Gonish shrugged: "You can probably obtain his corpse for me."

That burned and chilled by turns, but the brief fever left her colder, more remote from emotion. Death was something that she had seen with icy eyes, and she could face it for *him* as well as for herself. The only thing was—

"Suppose I were to offer the interstellar drive?"

Her intensity seemed to astound the man. He drew back, and stared at her. "Madam," he said finally, "I can offer you no intuition one way or the other, nor any logical hope.

"I must admit that I am puzzled by the electronic shield, but I get nothing, no sense of what it could be, or why it should help him. Whatever he did when he was *within* it could not to my knowledge assist him to escape through the impregnable walls of a Weapon

Shop battle cruiser, or out of the metal room where he was taken.

"All the science of the Weapon Makers and the Isher Empire is arrayed against him. Science moves in spurts, and we are in the dynamic middle of the latest one. A hundred years from now, when the lull has set in, an immortal man may begin to get his bearings, not before."

"Suppose he tells them the truth?" It was Prince del Curtin.

"Never!" the woman flashed. "Why, that would be begging. No Isher would think of such a thing."

Gonish said, "Her majesty is right, but that is not the only reason. I will not explain. The possibility of a confession does not exist."

She was only vaguely aware of his words. She whirled on her cousin. She held herself straight, her head high. She said in a thrillingly clear voice:

"Keep trying to contact the Weapon Makers. Offer them Gonish, the interstellar drive and legal recognition, including an arrangement whereby their courts and ours establish a liaison—all in exchange for Captain Hedrock. They would be mad to refuse."

The dark passion sagged; she saw that the No-man was gazing at her gloomily. "Madam," he said sadly, "you have obviously paid no attention to my earlier statement. The intention was to kill him within a maximum of one hour. In view of his previous escape from the Weapon Makers, that intention will not be deviated from. The greatest human story in history is over. And madam—"

The No-man stared at her steadily. "For your sake, it is just as well. You know as perfectly as I do that you cannot have children. You—"

"What's this?" said Prince del Curtin in a vast amazement. "Innelda—"

"Silence!" Her voice was a lashing thing of mortified fury. "Prince, have this man returned to his cell. He has really become intolerable. And I forbid you to discuss your sovereign with him."

The prince bowed. "Your majesty commands," he said coldly. He turned. "This way, Mr. Gonish."

She had wondered if she could be hurt further; and here it was. She stood, after a moment, alone in her shattered world. Long minutes dragged before the realization came that sleep at least would be kind.

XVI.

It was not so much a room in which Hedrock found himself, as a metal cavern. He stopped short in the doorway, beside Peter Cadron, a sardonic smile on his face. He saw that the councilor was watching him from narrowed eyes; and his lips curled.

Let them wonder and doubt. They had surprised him once by an unexpected arrest. This time it was different. This time, he was ready for them.

His gaze played boldly over the twenty-nine men who sat around a replica of the V table which the Weapon Makers council used in their public hearings.

He waited until Peter Cadron, the thirtieth of that high council, had walked over and seated himself; waited while the commander of guards reported that the prisoner was stripped of all rings, that his clothes had been changed and his body subjected to a transparency and found to be normal, with nowhere a hidden weapon. Having spoken, the commander and his guards withdrew, but still Hedrock waited.

He stood, smiling grimly, as Peter Cadron explained the reason for the precautions; and then, slowly, coolly, he walked forward and faced the open end of the V table. He saw that the men's eyes were on him. Some looked curious, some expectant, some merely hostile. All seemed willing for him to speak.

"Gentlemen," Hedrock said in his ringing voice, "I'm going to ask one question: Does anyone present know where I was when I stepped through that shield? If not, I would suggest that I be released at once because the mighty Weapon Makers council is in for a devil of a shock."

There was silence. The men looked at each other. "I would say," said young Ancil Nare, "that the sooner the execution is carried out the better. At the present moment, his throat can be cut; he can be strangled; a bullet can smash his head; an energy gun disintegrate him. His body is without protection—if necessary we could even club him to death.

"We know that all this can be done *this instant*. We do not know, in view of his strange statements, that it can be done ten minutes from now." In his earnestness, the youthful executive stood up as he finished, "Gentlemen, let us act—now!"

Hedrock's loud clapping broke the silence that followed. "Bravo," he said, "bravo. Such

well-spoken advice merits being acted upon. Go ahead and try to kill me in any fashion you please. Draw your guns and fire; pick up your chairs and bludgeon me; order knives and pin me against the wall.

"No matter what you do, gentlemen, you're in for a shock." His eyes chilled. "And deservedly so.

"Wait!" His thunderous voice drowned the attempt of the solid-faced Deam Lealy to break into speech. "*I'll* do the talking. It is the council that is on trial, not I. It can still win leniency for its criminal action in attacking the Imperial Palace by recognizing now, without further offense, that it has broken its own laws."

"Really," a councilor wedged in the words, "this is beyond toleration. It—"

"Let him talk," Peter Cadron said. "We shall learn a great deal about his motives."

Hedrock bowed gravely. "Indeed you shall, Mr. Cadron. My motives are concerned entirely with the action of this council in ordering the attack on the palace."

"I can understand," said Cadron ironically, "your vexation that this council did not respect a regulation more than three thousand years old when apparently you had counted upon it and upon our natural reluctance to make such an attack, and accordingly felt yourself safe to pursue your own ends, whatever they are."

Hedrock said steadily, "I did NOT count upon the regulation or the reluctance. My colleagues and I"—it was just as well to suggest once more that he was not alone—"have noted with regret the developing arrogance of this council, its growing belief that it was not accountable for its actions, and that, therefore, it could safely flout its own constitution."

"Our constitution," said Bayd Roberts, the senior councilor, with dignity, "demands that we take any action necessary to maintain our position. The proviso that this be done without an attack on the person or residence of the reigning Isher, her heirs or successors, has no meaning in an extreme emergency such as this. You will notice that we did secure the absence of her majesty during the attack. That—"

"I must interrupt—" It was the chairman of the council. "Incredibly, the prisoner has succeeded in concentrating the conversation according to his own desires. I can understand that we all have a guilty feeling about the attack on the palace, but we are NOT required to defend our actions to the prisoner. Therefore—"

He spoke curtly into his chair-arm 'stat, "Commander, come in here and put a sack over the prisoner's head."

Hedrock was smiling gently as the guard of ten came in. He said, "We will now have the shock."

He stood perfectly still as the men grabbed him. The sack came up and—

It happened.

When Hedrock, in the palace, half an hour before, had stepped through the section of wall, which he had brought up from the tombs, he found himself in a dim world.

He stood for a long time letting his body adjust, and hoping that no one would attempt to follow him through that electronic-force field.

It was not a personal worry. The vibratory shield was tuned to his body and his alone; and during all the years that it had been part of the wall in the underground palace storeroom, the only danger had been that someone might unknowingly wander into it, and suffer damage.

Hedrock had often wondered what would happen to such an unlucky innocent. Several animals that he had tagged and put through an experimental model had been sent back from points as far away as ten thousand miles.

Some had never been returned despite the stiff reward offer printed on the tag.

Now that he himself was in, there was no hurry. Normal time and space laws had no meaning in this realm of half-light.

It was nowhere and it was everywhere. It was the quickest place in which to go mad, because the body that intruded on it experienced time; *it* didn't.

He had found that a six-hour session made genuinely serious inroads on his sanity. His incursion earlier in the evening, through the shield in his hide-out, had been for what would have been two hours normal time, and the trip had revealed to him that the empress wanted to marry him.

Temporarily, that had guaranteed his safety; what was more important it also guaranteed that he would have access to the shield in the palace tombs. Accordingly, he had withdrawn swiftly, conserving the remaining four hours of the six that was the human limit.

His present incursion mustn't occupy more than four hours, preferably three, preferably

two. After which, he'd have to stay away from the mind-destroying thing for months.

The idea for the invention had been broached to him during one of his terms as chairman of the Weapon Makers council, an enormously autocratic position that had enabled him to assign an entire laboratory of physicists to assist the brilliant young man whose brain child it was.

Simply, the problem had been: The Weapon Shop vibratory transmitter bridged the spatial gap between two points in interplanetary space by mechanically accepting that space had no material existence. Why not then, the inventor had expounded, why not reverse the process, and create an illusion of space where there had been nothing?

The research was a success. The inventor reported the details to Hedrock, who thought it over and informed the man and his colleagues that the council had decided on secrecy. To the council itself, he made a negative report on the invention—and had it.

The subject, once explored, was considered one more closed door, was entered as such in the files at INFORMATION CENTER for the future reference of men who might have a repetition of the idea. Accordingly, it would never again be the subject of Weapon Shop research.

Some day, but not now, he would release the knowledge.

It was not, Hedrock reflected grimly, as he stood there patiently letting his body adjust, not the first time that an invention had come into his possession and been withheld from the public.

His own discovery, vibratory magnification, he had kept as a personal secret for twenty centuries before finally using it to establish the Weapon Shops as a counterbalance to the Isher emperors.

He still had several others; and his main rule for withholding or not had always been: Would release for general use be of benefit to the progressive spirit of man? Or would the power that it represented merely assist some temporal group in tightening a tyranny already too rigid?

Quite enough dangerous inventions were carelessly produced during the inventive spurts that came every few centuries, produced by scientists who never thought in a practical fashion of what the effect might be of their discoveries.

Damn it, why should a billion people die because some inventor had a brain that couldn't see an inch into human nature?

Then, of course, there were the people who saw an invention in terms of their own private or group or economic welfare. If they were withholding, as the empress was withholding the interstellar drive, they must be forced by all means to yield their secret.

Sometimes, the decision had been a hard one, but who else had the power, the experience to decide? For better or for worse, he was the arbiter.

He let the thought drain slowly out of him. His body was ready. The time had come for action.

Hedrock began to walk forward in the mist. He could see the people in the palace, standing rigidly like carven figurates seen at late dusk. His time relation to them had not changed a single instant.

He paid them no attention, even when they were in his way, but stepped through their bodies as if they were clouds of gas.

Walls yielded before his mass, but that had to be carefully done. It would have been just as easy, too easy, to sink through the floor, and so on into the earth.

The laboratory experiments of the inventor and his assistants had produced one such casualty; and repetition was not desired.

To avoid the calamity, the research staff finally designed that the initial creation of new space should be on a partial scale only. A ring was provided which, when activated, would increase or decrease the original apportionment at will, for use when heavy materials had to be penetrated.

The ring, one of two—the other had a different purpose—was what Hedrock used when he came to walls: first, an easy jump, followed as his feet left the floor by a touch on the activator of the ring, then swift release of the activator, and then a gentle landing on a floor that gave like thick mud under his feet.

It was simple for muscles so perfectly coordinated as his own. He reached the cache of machines which he had long ago tuned to this space, and secreted in the palace.

There was a small spaceship, with lifting devices, magnetizers large and small, particularly there were dozens of machines that could snatch and hold things. There were various weapons, and, of course, every tool, every instrument from spaceship to mechanical fingers had its own equivalent of the two adjustors necessary to their complete operation.

Every instrument in the ship, the ship itself, and the two adjustor rings on Hedrock's finger, were attuned to a master control on the switchboard of the spaceship.

The second ring and the matching adjustors on the machines comprised the second valuable function of the invention. By controlling the second ring, it was possible to go backward and forward in time for a short distance.

Theoretically, years could be covered; actually the shattering effect of the entire experience to the human brain limited a trip to a few hours backward or forward.

Hedrock had discovered that, in nine hours forward in time, and nine backward, eighteen altogether, the body lived the six normal hours that it could endure without going too insane. Three for one.

The method of time travel had no relation to the seesaw system of time travel unwittingly devised by the empress' physicists seven years before, wherein the body collected time energy, which could never again quite be balanced off, with the result that the time traveler was always destroyed.

There was no time in *this* space; there was only a method of adjusting the space to a given time in the normal world.

Hedrock eased the little spaceship and everything in it around to where the Weapon Shop cruiser lay-to beside the break in the palace wall.

Through the hard shell of the cruiser, he nosed his machine; then switched off the engines, and turned on the master time adjustor to full power, thrice the rate of normal time.

He waited tensely, watching the Sensitives, which were nothing but automatic relays converted to use in this space. It shouldn't take long. It—

The Sensitive lights flashed; the master switch clicked instantly down to one third its full power, adjusting the whole ship to normal-time rate. Simultaneously, Hedrock felt movement.

The great Weapon Shop cruiser was rising; he and his small machine were with it, perfectly matched as to time rate, and just far enough out of the special space to keep from falling through the walls of the cruiser.

If he was right, there were now two Hedrocks in the cruiser, himself here in the gray-dark realm, and himself returned to the palace *from* this very spy trip, made prisoner by the Weapon Makers and brought aboard the cruiser.

Unwise though to take that for granted. One of the great difficulties of moving around in time was that of locating people, and keeping track of them in crowds, or just keeping track. He had once wasted an entire six-hour period searching for a person who had gone to a theater. Therefore—

Best to make sure. He peered into the 'stats; and, yes, there he was, surrounded by guards.

The Hedrock out there was already back from this time trip, and knew what had hap-

pened. Which was more than *he* did. It shouldn't take long, though.

It didn't.

The cruiser flashed to the fortress that was its destination; prisoner and guards emerged and went down into the building, where the thick metal room had been constructed. Hedrock forced his ship through the heavy walls and got busy.

First, he put out a sound collector; and, while listening to the argument in the room, unloaded some of his machines. When the guards rushed in with the "sack," which was simply a gagging device, he waited till it was about to be fastened, then lowered a mechanical hand, and snatched it into his own space.

He sat then, with his fingers on the time control, waiting for developments.

In the room itself, the silence was a thing of tensed nerves and startled looks. Hedrock, the prisoner, stood utterly still, a faint, sardonic smile on his lips, making no effort to break the grip of the guards who held him.

He felt remorseless. There was a job to be done; and he intended to do it thoroughly. He said icily:

"I won't waste any time on verbal argument. The determination of this organization to kill me, despite the fact that the Pp machine proved my altruism and good will shows a defensive conservatism that always tries to destroy when confronted by something it does not completely understand.

"That conservatism shall be taught by overwhelming force that there exists an organization capable of overthrowing even the mighty Weapon Makers."

Peter Cadron said coldly, "The Weapon Shops recognize no secret organization. Guards, destroy him!"

"You silly fool," Hedrock cried. "I thought better of you, Cadron, than that you would give such a mindless command—"

He went on talking grimly, paying no attention to what was happening. Without looking around at the guards, he *knew*.

In that other space, his earlier self simply cut the time-adjustor switch, whereupon everything in the room stabilized. Without haste, his earlier self relieved the guards of their weapons, and then proceeded to disarm every member of the council, including the removal of the rings from their fingers, and the 'stat radios from their wrists and chairs.

Next, he slipped handcuffs onto their wrists, chaining them all together in a long row around the table. The guards he handcuffed arms to legs, and set outside in the hallway. Then he closed and locked the door.

The whole job took no time—literally.

He returned to the control board, adjusted his time rate from zero to normal and listened to the uproar of men discovering their situation.

The dismay was vast. Chains clanked. Men cried out in wonder and alarm, and then sank back looking pale and terrified. Hedrock knew it was not personal fear; it was all too plain that every man present had suddenly had a terrible vision of the end of the Weapon Shops. He waited for their startled attention to jerk back to him, then went on swiftly:

"Gentlemen, calm your fears. Your great organization is not in danger. This situation would never have arisen if you had not pursued me with such singleness of purpose.

"For your information, it was your own founder, Walter S. de Lany, who recognized the danger to the State of an invincible body such as the Weapon Makers. It was he who set a group of friendly watchers over the Shops. That is all I will say, except to emphasize our friendliness, our good will, our resolve not to interfere so long as the Weapon Makers live according to their Constitution. It is that Constitution which has now been violated in its one inflexible article."

He paused there, his gaze angrily sweeping the faces before him, but mentally he was coolly appraising his words. It was a good story withal, the lack of detail being its safest feature. All he desired from it was that it conceal the fact that an immortal man was the only watcher.

He saw that several of the men had recovered sufficiently to attempt speech, but he cut them off ruthlessly:

"Here is what must be done. First, keep silent about what you have learned today. The Watchers do not wish it known they exist.

"Secondly, resign *in toto*. You can all stand for re-election, not for the next term, but thereafter. The mass resignation will serve as an impressive reminder to the rank and file of the Shops that there is a Constitution, and that it is one to respect.

"Finally, no further attempt must be made to molest me. About noon tomorrow, suggest to the empress that you will exchange me for the interstellar drive. I think myself that the drive will be forthcoming before that hour

without any bargaining, but make the offer. And now—any questions?"

His voice it was that must have held them in thrall so long. As he finished, there was an angry clamor, then silence, and then a lesser clamor, and silence again. Hedrock did not fail to notice that three or four men, among them Peter Cadron, did not join in either manifestation of that confusion. It was to Cadron that Hedrock addressed himself:

"I am sure that Mr. Cadron can act as spokesman. I have long regarded him as one of the most able members on the council."

Cadron climbed to his feet, a strongly built man in his middle forties. "Yes," he said, "I believe I can be spokesman. I think I speak for the majority when I say that we accept your terms."

No one dissented. Hedrock bowed and said loudly:

"All right, No. 1, pull me out!"

He must have vanished instantly.

They tried no stunts, the two Hedrocks who were briefly together in that misty partial space. The brain suffered too greatly from the slightest attempt to fool with time. Curious how that worked, but experiments had proved the fact long before.

The earlier Hedrock sat at the controls of the little ship, driving it hard back into time and toward the palace; the other stood beside him, looking down gloomily.

He could find no clear reason for his mood. There were still things to do, of course, but they were unimportant now, secondary. The main job was not actually done; the interstellar drive was still not in the open, but the psychological tendency was so marked that the issue was no longer in doubt. It was possible that Innelda would hold the "drive" back for bargaining purposes.

The exact method didn't matter. Victory was sure. As for what he had just been forced to do, that was another matter. What a horrible, unpleasant affair it had been. It seemed incredible that he who admired every member of the present Weapon Shop council should have been compelled even in self-defense to act against them. Nevertheless—

There could be no real regret. Earth's immortal man must assume his life was worth saving. For better or for worse he was what he was, and all the world must put up with him so long as he could protect himself.

Hedrock grimaced and saw that they were at the destination. The shield loomed up in the dim reaches of the shadow palace, a thing of softly radiant flame.

They tried no trickery, attempted no paradoxes. It was his earlier self who stepped through the shield and became one more misty shape in the palace room.

Hedrock burned the shield with a flare of gunpowder—and then sent the little ship hurtling across the dark city toward one of his dozens of secret apartments. Swiftly, he set the Sensitives to hold the ship at normal time rate for possible future use; then he focused the power of a lifter on himself, and felt it lower him into the apartment.

He stood alive in normal time, and headed straight for bed. Sleep came easily to his strained body.

He wakened shortly after noon the following day, and sat eating as he listened to the 'stat news. But there was nothing about the interstellar drive.

Frowning, Hedrock connected the 'stat to one of his relay systems, and by that roundabout fashion called the Weapon Makers. He smiled grimly as Peter Cadron's face appeared on the plate.

Cadron's face lighted up. He said, "Hedrock, it's you!"

"Yes."

The man said tensely. "Hedrock, I want to tell you that I'm glad to see you. The council has decided to hold no grudges."

"Thank you. That means definitely no plotting."

"Our word of honor."

Hedrock sighed. In a way he had been worried. He need be no longer. He said finally, "Have you made the offer to exchange me?"

"We didn't have to." The man's dark eyes glowed like pools of light. "Listen, Hedrock, we've been sitting here on tenterhooks waiting for you to call."

"Yes?"

"We have received from the empress a most remarkable offer. Recognition for the Shops, a share in the government. It's a surrender of the first order—and all we've got to do is deliver you up alive, as you yourself have stipulated."

Hedrock said grimly. "You are refusing, of course."

"Eh?" Cadron's image stared.

Hedrock went on in a steely voice, "Cadron,

you don't really tell me that your council is excited about such a thing. Don't you realize that there can never be a common meeting ground between two such diametrically opposed forces?"

"But," protested Cadron, "that's one of the things you suggested yourself as a reason for your going to the palace."

Hedrock said steadily, "That was a blind. We *had* to have during this crisis of civilization somebody in both the Shops and the palace. Wait!"

He went on in a ringing voice before the other could interrupt:

"Cadron, the Weapon Shops constitute a permanent opposition. The trouble with the opposition of the old days was that they were always scheming for power; all too frequently their criticism was dishonest, their intentions evil; they *lusted* for control.

"Never must the Weapon Shops allow such emotions to be aroused in their followers. Let the empress rebuild her own chaos. I do not say she is responsible for the corrupt state of the empire, but the time has come for her to attempt a vigorous housecleaning.

"Throughout, the Weapon Makers will remain aloof, interested but maintaining their great standards for the relief *throughout the galaxy* of those who must defend themselves from oppression.

"The gunmakers will continue to sell their guns and stay out of politics."

Cadron said slowly, "You want us then to—"

"To exchange me for the interstellar drive; nothing more nor less. And now, Cadron—"

Hedrock smiled. "Cadron, I have enjoyed knowing you personally. Pass on my felicitations to the retiring council. I intend to present myself at the palace one hour from now; and none of you will hear from me again. Good-by to all of you, and good luck."

He shut off the 'stat with a jerky movement of his hand, and sat there conscious of that old, old pain of his.

He forced the great loneliness out of his soul at last and put his carplane down on the palace exactly on the hour.

He watched the empress from under half-closed eyes, as they talked. She sat stiffly beside him, a tall, graceful, long-faced young woman, whose green eyes hid her thoughts.

They sat under a palm in the garden that was the reception room of the thirty-fourth floor. Soft breezes blew against them; the shaded lights shed a gentle glow over the entire scene. Twice, he kissed her, conscious that her diffidence had an inner meaning that he must bring into the open.

She took the kisses with all the passivity of a slave woman.

Frowning, Hedrock drew back. "Innelda, what's the matter?"

She was silent; and he pressed on, "The first thing I find, when I come back, is that Prince del Curtin, who has been almost literally your right hand, has been banished from the palace. Why?"

The words seemed to rouse her out of some depth. She said with a shadow of fire in her tone, "My cousin has had the temerity to criticize and oppose a project of mine. I will not be badgered even by those I love."

Hedrock said, "Badgered you, did he? That doesn't sound like the prince."

Silence. Hedrock stared at her slantwise, then went on in a persistent tone:

"You gave up the interstellar drive for me, and yet now that you have me, I can't feel that it means anything."

During the long silence that followed, he had his first thought of what all this rigidity could be: Was it possible that she knew the truth about him? Before he could speak, her low voice came:

"Perhaps all I really need to say, Robert, is that there will be an Isher heir, an *Isher* heir."

The child part of the revelation hardly touched him. She knew. That was what counted. Hedrock sighed finally. "I forgot. You have Gonish, haven't you?"

"Yes, I have Gonish; and he didn't need very much more information than he had. A few words; and the intuition was complete."

He said at last, "What are you going to do?"

Her answer came, remote-toned, "A woman cannot love an immortal man. The relation would destroy her soul and her mind." She went on, almost as if speaking to herself, "I realize now I never did love you. You fascinated me, and perhaps repelled me a little, too. I'm proud, though, that I selected you without knowing. It shows the enormous instinctive vitality of our line. Robert!"

"Yes?"

"Those other empresses—what was your life like with them?"

Hedrock shook his head. "I won't tell you. I want you to make up your mind without even thinking of them."

She laughed brittlely. "You think I'm jealous. It's not . . . not that at all." She added in a curious disjointed fashion, "Henceforth I'm a family woman, who intends to have the respect as well as the affection of her child. An Isher empress can do no other—but I won't press you."

Her eyes darkened strangely; she said with sudden heaviness, "I'll have to think it over. Leave me now, will you?"

She held out her hand. It felt limp under the pressure of his lips; and Hedrock went frowning to his apartment.

It was several minutes before he thought of Gonish. The guards brought the No-man without demur, and left them alone.

They sat for a while, staring at each other. "I realize," said Gonish at last, "that I'm going to receive no explanations."

"Later," said Hedrock; then, "What are *you* going to do?"

"Nothing."

"You mean—"

"Nothing. You see, I understand just what the knowledge would do to the average and even the higher-type human being. I shall never say a word, not to the council, not to anyone."

Hedrock was silent, relieved. He knew this man, his enormous integrity. No fear was behind that promise, simply a stark honesty of outlook that would never be more than equaled. He saw that Gonish's eyes were studying him. The No-man said:

"With my training, I would have quite naturally known better than to make a test of the effect of immortality on others. But you made it, didn't you? Where was it? When?"

Hedrock swallowed hard. The memory was like fire. "It was on Venus," he said in a flat voice, "during the early days of interplanetary travel. I set up an isolated colony of scientists, told them the truth, and set them to work to help me discover the secret of my immortality.

"Horrible, oh—" His voice thickened in distress. "They couldn't stand watching my perpetual youth as they grew old. Never again."

He shuddered; and the No-man said quickly, "What about—your wife?"

Hedrock was silent for a long minute. He said then slowly, "The Isher empresses in the past have always been proud of their relation to the immortal man. For the sake of the children, they put up with me. I can say no more."

His frown deepened. "I've sometimes thought I should marry oftener. The immortal strain might, just might, repeat that way. This is only my thirteenth marriage. Somehow, I didn't have the heart even though"—he looked up—"I've developed a perfect method of aging my appearance gradually, enough to have a psychological effect on those who actually know the truth."

There was an odd, grim look on Gonish's face, that narrowed Hedrock's eyes. He said quickly, "What's the matter?"

The No-man said, "She loves you, I think; and that makes it very bad. You see, she can't have any children."

Hedrock rose up out of his chair, took a step forward as if he intended the No-man bodily harm. "Are you in earnest? Why, she told me—"

Gonish was bleak. "We of the Weapon Shops have studied the empress from childhood. Her file, of course, is accessible only to the three No-men and to the members of the council. It's the old story. These old families tend to thin out. I hope you'll pardon me, but it's the truth."

The No-man's gaze fixed Hedrock sharply: "I know this wrecks your plans, but don't take it so hard. Prince del Curtin is next in line, and will carry on, rather strongly, I think. There'll be another empress along in a few generations, and you can marry her."

Hedrock ceased his pacing. "Don't be so damned callous," he said. "I'm not thinking of myself. It's these Isher women. The trait hasn't shown clearly in Innelda, but it's there. She won't give up that child; that's what I'm worrying about."

He swung directly toward the No-man again. "Are you absolutely sure? Don't play with me, Gonish."

The No-man said steadily, "Hedrock, I'm not playing. The Empress Isher is going to die in childbirth and—" He stopped; his eyes fixed on a point beyond Hedrock.

Hedrock turned slowly, and faced the woman who stood there, the woman who said in a cold voice:

"Captain Hedrock, you will take your friend, Mr. Gonish, and depart from the palace within the hour, not to return until—"

She stopped and stood for a moment like a

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figure of stone. She finished with a rush, "Never," she said thickly. "Never come back. I couldn't stand it. Good-by."

"Wait!" Hedrock cried piercingly. "Innelda, you mustn't have that child. You—"

He was talking to a closed door.

XVII.

For Neelan, except that his eyes were clamped tight, and his every muscle clenched, the moment after he fired his gun was—normal.

The shock of the realization that he was still alive ricocheted along his nerves in a spasm of comprehension. The two bullets, the explosions of which had deafened him, had not touched him. That meant—

What a fool he had been to let them get away with it, what an unutterable fool!

He leaned back, eyes still closed, letting his body calm, his mind go slow and blank, all thought trickling away. Nirvana, the ancient Hindu fakirs had called that perfect, mindless attunement with the universal—nothingness—and the great institutes for mind and sensory study, established millenniums ago, had found it was the essential basis for all mind training.

Slowly, Neelan grew conscious of a steady and enormous pulsing that shook his brain with its thunder. But that physical phase, that pounding of his heart, with its attendant murmurs of blood flow, and all the tens of thousands of muscular tensions, each with its own tiny sounds—that phase, too, passed.

He was alone with utter calm and utter peace.

His first impression, after that moment of ultimate dissociation from matter, was that he was sitting in a chair. The picture was so clear that he knew after a few seconds that the chair was in the control room of his own lifeboat, that it was in fact the multipurpose chair of the little ship's control board.

He was in his own machine; and only a few minutes had passed since he had first seen the alien spaceships. All the rest was, not exactly illusion, but willed thought, pictures pushed at him, and which had in a flash of power seized control of his mind before he could even be aware that the attempt was being made.

Neelan sighed and opened his eyes. There mustn't be any hurry, so he sat there letting the familiarity of the surroundings figuratively suffuse his being.

This was his environment; this was where he had been physically throughout his entire interview with the spiders. Here he would remain until they removed him physically or turned their destroyer guns on him.

Satisfied at last, he bent forward and peered into the glowing 'stats, and saw—

One ship! Not hundreds, *only one.*

His calm faded in a puff of amazement, that grew, for he wasn't even inside the alien ship. He was out here in space, and had never been anywhere else. He was here free to act as he pleased and—

He acted. His fingers flashed toward his accelerator, pushed it into gear. Under him, the lifeboat tugged like a trapped thing. It bounced frantically, rolled, and reared up like an untamed horse maddened by the ghastly feel of the rider on its back. It was so violent that Neelan's heart came up tight into his throat, the sweat broke out on his face; his body seemed on the verge of shaking apart.

Shuddering, he shut off the accelerator, but after a moment he smiled shakily through clenched teeth. Whatever else it was, it had been real; his machine had responded; power in torrents had answered the touch of his fingers on the controls; and—

"Man, you cannot succeed!"

He had been expecting a mental interference, instinctively cringing in anticipation of the titanic thing. The shock was utterly different than his expectation.

The alien thought lacked force. It seemed far away, weak. He was conscious of a genuine astonishment, an unsteady, wide-eyed comprehension: *This* was the reality. Earlier, they must have established over him an instantaneous and complete rapport; now they had to reach at him from outside.

Better and better; how much, how tremendously much better. The spider-creatures that had seemed so supreme were deflating every minute.

Four hundred ships become one. A seemingly superhuman mind control sagged so far that—

The flash of thought, of triumph, ended as the alien mind vibration touched him again, cold, steely, remorselessly logical:

"You cannot escape. You are in our power. We shall destroy you when you have served our purpose. So cease this mental and physical squirming against your fate, and look around you."

Neelan was only dimly aware of the ending of that feral admonishment. He leaned breath-

lessly back in the control chair, and sat—realizing.

Here in spite of all that he had done was, quite simply, death.

"It is true," the creature-thought went on in its precise and inhumanly icy fashion, "that you have released yourself from our mental thrall, and have discovered that there is but one ship.

"It would have been easier, of course, for us, if you had remained under our control. However, we accept the situation. We desire to study further your sensory or emotional relation to your brother. There will be no pain, so, as you cannot escape, you should yield yourself to the investigation. Death will come in due course. We will advise you when. That is clear enough, is it not; and it conforms, as we understand it, to your own moral system."

Neelan simply sat there. He felt an absolute maze of fascination; and then a dismay so intense that it hurt his head. It wasn't fear; nowhere in him was there a tremor of fear. It was simply—

So these monsters thought they were conforming to human moral standards by giving him warning of death. They wanted his cooperation; and they believed, by explaining their plans for him, the logic would be of such clarity that he would automatically yield; and so everything would be gotten over with as swiftly as possible.

What a pretty little picture it was. No fuss, no bother; simply everybody being perfectly wonderful about it all; and then—the end.

Well, damn their miserable hides! He felt a violence, a very flame of outraged anger. So that was what intellect did to a spider. Instead of trying to bite the hand that was reaching forth to crush it, it examined all methods of escape and, finding none, accepted death without a struggle.

Neelan smiled harshly. "You seem to have done pretty well, you and your kind," he said with crisp ferocity. "Here you are in a ship the size of a small room. You obviously come from a mentally superior civilization; and I'd like to see the planet that spawned you, its industries, its ordinary way of life; it should be interesting.

"Beyond doubt, your brand of logic has done well for you. Nature can pat herself on the back for a successful experiment in producing intelligence, but, by heaven—"

He sat up; his face twisted, his voice spat the words as he finished, "By heaven, men don't live that way. You may not know you've been in a fight when you get through with me, but you will know that I didn't conform for a single instant, that I took death the hard way, and tried my damnedest while there was a breath in my body."

Neelan was breathless when he finished, and startled. It had sounded, he thought ruefully, like purest bravado; he must seem to them like some alien, mindless creature, hissing defiance. The outside thought was coming at him again:

"You will find that we understand your psychology better than you think. I repeat: look around you!"

This time the admonishment penetrated. Neelan frowned, pulled his mind even further out of his passion and was himself.

He saw what they meant.

The big ship, whose captive he was, had rolled upward; its immense bulk filled the forward and rear plates now, only touching the edges of the right and left 'stats.

Where it had been was a gulf of space, and deep in that gulf swam two white, yellow-tinged suns.

They were tiny at first, little more than round balls, little more than bright stars. But they grew. They grew.

And far to the left another tinier sun appeared. The two larger showed after a moment six inches in diameter. They had seemed a foot apart; they separated farther. One remained small, while the other drew nearer, took on more size.

The second sun swung farther and farther to the left; his estimators showed it finally as about three billion miles away.

Further tests showed the angular diameter of both the nearer suns of the system to be larger than that of Sol. The luminosity of the nearest was 1.12 Sol, and of the second .32; weights were 1.14 and .97 respectively as compared with Earth's sun.

The third sun was a mere blur of light in the distance. It would have taken days for his inadequate instruments to compute its characteristics. But the fact that it was there made Neelan frown; he searched for, then, and after a moment found a red point in the distance, the fourth sun of that system.

He sat grim, as the alien mind directed its cold vibrations at him:

"Yes, man, you are right. These are the

suns of the system you call Alpha Centauri. The two nearest are Alpha A and Alpha B. The third sun is Alpha C, and the red point is, of course, the insignificant Proxima Centauri. These latter two do not concern us. What matters is that your brother stated that he was on a freak planet of this system.

"There is only one freak. It is a planet which, by describing a Figure 8, revolves in turn around the Centauri suns, Alpha A and Alpha B. It does this by traveling at the unusual speed of nearly one thousand miles a second. In its eccentric orbit, it passes very close to each star, much as a comet might, but, unlike a comet, it is forever unable to break away. The gravitational field Alpha A then Alpha B catches it, and whips it on its way.

"It is now approaching ever nearer to Alpha A, the star ahead; and, very plainly, we desire to use your connection with your brother to locate his body, and, in the course of the search, further our own studies of human emotions.

"It is clear, is it not, that you will agree to this?"

It was clear. Only—

"But he's dead," Neelan managed to ejaculate.

"Exactly. That is the astounding thing. Your brother is dead, and yet your emotional feeling for him has heightened, not lessened. To us, this is a unique opportunity for studying a sensory equipment that has no parallel in the world of intelligence."

"But—" Neelan began. And stopped.

He felt hopeless before the impenetrable density that was here. He mourned his brother; and that was incomprehensible to them. It was damnable to think of Gil lying lifeless on a limitless sea of sand, his cells already collapsing from the ever rising pall of heat as a three-thousand-mile-a-second planet drew nearer and nearer one of its two parent suns.

It was damnable; and yet, at the same time, thank God he was dead. The suffering was over; the mortal remains were beyond the pain of heat, beyond the ceaseless worry of the stinging sand, beyond thirst and hunger, beyond fear and unreasonable hope. Death had come to Gilbert Neelan as it must to all men. God bless him and keep him.

There was, of course, the fact that, if Gil had hung on a little longer, the spiders, in their research work, might have rescued him—and then given them death together.

Neelan smiled dully. That was so obviously no solution that—

He shook himself. What was the use, he thought wearily? If these creatures couldn't understand such a basic human emotion as grief, it was useless to expect them to know the meaning of mercy.

It would be worth it to yield just for the sake of seeing Gil again, and perhaps giving him a decent burial. It—

Wait a minute. With a jerk, Neelan climbed to his feet, and paced the floor of the lifeboat. He paused finally, said aloud ringingly:

"I'll make a deal with you. I'll do what you ask. I'll co-operate—provided you release me afterward. That's logic, isn't it?"

The reply came instantly, coldly, "To the contrary, the logic is simply that you will do what we desire without any bargain; and, besides, what would make us stick to such a bargain?"

"Surely, you would keep your promise!"

"A promise made without relation to the reality that you are our prisoner. Nonsense."

"But—"

Neelan stopped himself with deliberate will. The argument was so unavailing that it had no meaning. The two mental approaches were so many poles apart that all the universe seemed to stand between, and mock their dialectics.

Abruptly, he felt impatient, angry. So they thought they had him, did they? All they had to do was suggest that it would be interesting for him to participate in a sensory experiment with his dead brother; and he'd come a-running, surrendering his own body to them without further argument.

Neelan smiled a savage smile. "We're back to where we started, boys," he said grimly. "No dice. If your reading of human psychology is that I'll play the role of a ghoul, you've made another misplay. The game is over, and you've lost that trick. Better try again, and this time wear your armor. I'm becoming less amenable every second."

"You refuse!" There was a sharp, intellectual surprise in the question, almost wonder. "The prospect of seeing your brother has no appeal for you?"

Neelan wavered. He was suddenly ill with this bargaining over a corpse.

"You incredible monsters!" he rasped finally, "shoot me and get it over with. Maybe this

doesn't make sense to your lopsided brains, but I'm just screwy enough to feel ill that a man is dead, and yet not have to see his body."

There was silence; then, "It is clear, man, that you do not understand our intention. We propose to resuscitate your brother. It is vital that this be done swiftly, as the carcass will shortly decay beyond our control in the heat to which it is being subjected. Make up your mind, quick!"

Neelan lay under a light. Just where he was, or even where they wanted him to think he was, he had no idea. His body rested comfortably in what could have been a form-fitting coffin.

The comparison made a gruesome titillation along his nerves, but he quieted that jumpiness; he lay steady, determined, cold with suppressed intention.

There had, of course, been no choice. Unthinkable that Gil should not be given his second chance at life, even though he might be killed again a minute later.

Neelan watched the light. It hung in blackness above him or—the thought made a curious pattern—was he staring *down* at it?

It didn't matter. There was only the light, shining out of the darkness, shining, shining. It was not, he noticed after a long while, a white light; and yet, conversely, it seemed to have no definite color. Nor was it bright, nor was it warm. It—

His thought paused; he flinched. It was the notion of heat that did it, that brought consciousness of how cold it was.

The light was—ice.

The thought was like a signal, a cue. "Emotion," said a spider's mind vibrations far away, "is an energy. It acts instantaneously over any distance. The reason why the connection between your brother and yourself ever diminished in intensity was your expectation and his that it would so diminish.

"This expectation is almost entirely unconscious. Your respective nervous systems naturally recognized the widening distance when he set out for Centaurus; and instinctively yielded to the fact. A few moments ago, your own neural body felt your brother die, and broke the connection because it thought it must.

"Comprehend, man, that death is no barrier until the body decomposes, and can no longer respond to stimuli. Comprehend that your kind possesses the most remarkable physical equipment in the living universe—and now accept the connection."

It was instantaneous. He was lying, Neelan saw, on a grassy bank beside a stream. The water gurgled and babbled over rocks. A gentle breeze blew into his face, and through

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the trees to his left a glorious sun was rearing above the horizon.

All around him on the ground were boxes and packing cases, several machines, and four men, lying quietly, sleeping.

The nearest man was Gil. After a crazy moment, Neelan controlled his mind again, thinking desperately, "Steady, you fool, it's only an image, a *thing* they've put into your brain. Gil is on sand, on a freak planet, heading into hell. This is a dream world, an Eden, Earth in its sweetest summertime."

Several seconds passed; and the body of Gil slept on with flushed face, breathing stentoriously, as if it couldn't get enough air into it, as if life was returning the hard way, and hanging on with terrible effort.

A faint thought came into Neelan's mind. "Water," it said. "Oh, God, water!"

He hadn't thought that.

Literally, Neelan threw himself at the stream. Twice, his cupped hands trembled so violently that the precious water spilled onto the green grass. At last, a measure of sanity came, and he searched one of the boxes and found a container.

He kept letting the water trickle in and around Gil's mouth. Several times, the emaciated body contorted in dreadful coughing. But that too was good—dead muscles jarring back to life. Neelan, eyes glinting, persisted.

They were together now, Gil and he; he could feel his brother's slow heartbeat, could see all the mind pictures that pushed hesitantly into a brain that had scattered far. The old, wonderful, sensory relation it was; and Neelan felt his first content as Gil stirred in awareness.

"Why, Dan"—there was a vast amaze in Gil's thought—"you old devil! Where did you come from?"

"From Earth!" Neelan spoke aloud into the breeze that blew in his face.

The answer seemed all that Gil needed. He sighed, smiled, and, turning over, withdrew mentally into a deep sleep.

Neelan began to prowl around the boxes, looking for dextrose tablets. He found a bottle of the quick-acting food, and slipped a tablet into Gil's mouth. It should, he thought, dissolve gradually and—

Satisfied that he had done all he could for the moment, Neelan drew back and for the first time the other men ceased to be simply hurdles to step over, irritating natural obstacles in the path of his nursing of Gil.

There was not even a shadow of shame in him at his neglect. A man saved his own children first. In a crisis, kinship counted.

Gil first; then—

He began to dole out water to each of the three men in turn, and then dextrose tablets. He was straightening from the work, when a spider-thought touched him, matter-of-fact in its steely overtones.

"You see," it said, "he did attend the others, too. The emotion involved is more than just an extension of paired spermatozoa reacting sympathetically."

That was all there was, just that comment. But it stopped Neelan in his tracks. He stood shuddering, adjusting his mind to catastrophe.

It wasn't that he had forgotten the spiders. Memory of them had simply been pressed into the remote background of his mind by the urgency of events.

And now here was the deadly reality again.

It worked on his mind, as the minutes became hours, and no other alien thought came. Neelan stared up into the bluish sky, up at that glorious, yellow-white sun—and hated the spider folk.

But that, he realized, was like savages of old shaking their fists and mouthing their maledictions at the evil demons who lurked in the heavens.

Tensed finally, but calm, he fed his sick charges a liquid made of highly digestible fruit juice concentrates dissolved in water. One of the men, a lean, handsome fellow, revived sufficiently to smile up at him in a puzzled fashion, but he asked no questions; and Neelan volunteered no information.

When all the patients were sleeping again, Neelan climbed the tallest tree he could find, and studied his surroundings. But there were only trees and rolling hills and far, far away, almost lost in the mist of distance, a wider glint of water.

What interested him more were patches of yellow color on a patch of trees a quarter of a mile along the creek.

He shinnied down the tree, and walked with some excitement, following the stream bed. It must have been farther than he had estimated, for when he came back with a container full of the fruit, the great red sun was past the zenith.

But the trek had done him good; he felt

better, more alive; and he was thinking shrewdly:

Gil and Kershaw—if one of these chaps was Kershaw—must have visited this planet. They must have tested the fruits they found, and as soon as they recovered sufficiently, they'd be able to tell him whether this yellow stuff was edible.

There might even be a pocket analyzer in one of the packing cases.

If there was, he couldn't find it. But he did uncover a number of instruments, including a recorder for communication disks, used in surveying and marking land sites. They must have left a lot of those on their various points of landing.

The red sun lowered toward—well, the west. He'd call it that, Neelan decided wryly. Late in the afternoon, the second sun came up in the east, tinier, a pale orb.

For a while, then, it grew warmer, but cooled off when the larger sun sank behind the horizon, and "night" set in.

It was like a dull day on Earth, with a ghost of a sun peering through heavy clouds, only the sky wasn't cloudy and there was none of the humidity and closeness of a dull day. Soft winds blew. The third sun came up, but its dim light seemed to add nothing. A few, faint stars showed.

Curiously, the bright gloom began to get on Neelan's nerves. He paced along the creek bank, and he thought finally:

How long, oh, how long would this . . . this sensory investigation continue? How long would these inhuman things carry on the torture?

"Damn you," he raged in abrupt fury, "why don't you give me back my lifeboat and go away? You were kind enough not to leave us on the freak planet. Why do you want to kill us anyway?"

The answer, surprisingly, came at once, and seemed to float at him out of the dim, cloudless sky, precise and supernally dispassionate:

"Your first request is impossible because your ship, on entering our magnetic field became a part of it. It has already been dissolved into a complex screen and will form part of our organized reserve of developed energies."

"Y-you've destroyed it!" Neelan stood utterly appalled. Just how everything had happened, just *what* had happened, was still not clear. But here was a tremendous fact that

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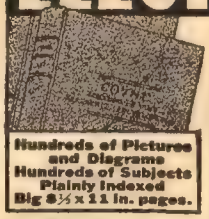

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shook him to the roots of his being.

The lifeboat was gone. Whatever else happened, or had happened, that disaster would leave its mark. He realized that his informant was paying no attention to his starkly spoken interjection.

"Your second request," the spider-thought was saying, "is equally impossible. We are not quite what we seem. Our race was not, as you suggested, one of Nature's successes. In this ship is actually the remnant of our people. All of us here present are immortal, the winners in the struggle for supremacy and existence on our planet. Each and every one of us is supreme in some one field by virtue of having destroyed all competition.

"We intend to remain alive, our existence unsuspected by the several other races in the universe. Because of the accident that precipitated you into our midst, you must die. Is that clear?"

Neelan had no answer for here at long last was a completely understandable logic. He was to be killed because he knew too much. He—

"It is our intention," said the cold mind at him, "to make a final investigation of man's sensory equipment on the basis of what we have discovered through you, and then leave this portion of space forever. The investigation will take some time. You will please have patience until then. There will be no answers meanwhile to your petty appeals. Conduct yourself accordingly."

That, too, was clear. Neelan went back slowly to the camp. The lean, tired-looking man who had smiled at him earlier, was sitting up.

"Hello," he said cheerfully. "My name is Kershaw. Derd Kershaw. You must be Dan Neelan. Thanks for saving our lives."

"You're thanking me," said Neelan gruffly, "too soon."

But the sound of the human voice brought a gathering excitement and—just like that—an idea.

He worked, now that the hope had come, with terror in his mind. The fear was like a great weight that made him cringe down in momentary expectation of destruction.

The job itself was simple enough. With Gil's energy gun, he cut trees into little round disks about an inch thick. The disks he kept feeding into the Survey recording machine, which imprinted on the elements of each a

message stating the position of himself and his companions, describing the spider folk, and the threat they had made.

For some of the disks, he set the recorder to various antigravity pressures, ten feet, twenty feet, fifty—up to five hundred—and watched them float up into the sky to the level their atoms had been adjusted for.

They drifted in the vagrant currents of the air. Some just hung around and made him sweat with rage at the slowness with which they scattered. Others whisked out of sight with a satisfying rapidity.

Some of them, Neelan knew, would lodge on hillsides, some in trees, some would float for years, perhaps centuries, prey to every breeze that blew, and every hour that passed they would be more difficult to find, would take longer to search out.

The spider folk were going to have a hell of a time preventing the knowledge of their presence from being spread abroad if—

"Oh, lord of space," Neelan moaned aloud in the agony of his fears, "give them two days to scatter, two days—"

Some of the disks, he simply rendered plastic in the recorder, and tossed into the creek, watched them gurgle off in the slow rills of bubbling water.

He paused finally to feed his patients, grudging every minute he had to give to the delaying work. He himself did not eat, but crashed another tree, and began to cut its bole into disks. He was working tensely on a second tree when he grew aware that Kershaw had crawled over to the recorder, and was tuning his wrist 'stat to the message.

The man looked hard at Neelan finally. "So that's what we're up against," he said slowly. "What makes you think it'll do any good?"

Neelan said: "They're logic hounds. They'll accept a *fait accompli*. The reason they haven't bothered us so far is that they're near Earth studying man's emotional structure. At least, that was their intention, and I was told they wouldn't talk to me for a while. My guess is they're too far away for their brand of telepathy."

Kershaw was thoughtful, said at least: "But what are our chances of rescue? What did Greer do with the stellar ship?"

Neelan explained briefly, and finished doggedly: "I know it looks bad for us, but the spiders said they were definitely leaving this part of space. Why would they leave except—"

"They must know that soon great ships of Earth will be plying the Centauri traffic lanes. The Weapon Makers must have forced the empress to disgorge."

"I think," said Kershaw quietly, "that we'd better get busy. You cut the trees and pile the disks. I'll feed them into the machine. I—"

He stopped, and curiously swayed. His gaze flashed wildly up beyond Neelan's head. Neelan whirled and stared into the sky and saw—

A ship!

For a mind-shattering moment, he thought it was the spider ship as seen from far away. And then the mottled hue of it in the sun, and the great letters on its bottom snatched his reeling attention; the letters said:

WS-CENTAURUS-719.

The ship was not far away, but low down. It skimmed by less than half a mile up; and it was gone over the horizon to the east as Neelan fired frantically with his energy gun.

Exhausted, Neelan sank down on the soft earth, to be prodded at last by Kershaw's urgent voice:

"Get busy, man. Keep feeding the disks to the skies. Did you notice that was the seven hundred nineteenth Weapon Shop interstellar liner? It must be packed with colonists."

Neelan nodded gloomily. "It may be years before another one passes overhead. They could be colonizing the other planets first, and meanwhile we've got to stay right here. We could wander over a planet as big as this the rest of our lives without ever seeing a colonist."

"Yes," said Kershaw, "we've got to stay here."

The slow months passed.

XVIII.

It was Del Curtin who got Hedrock into the palace on the final day. "We've got to," the prince had whispered, "get somebody near her. She must listen to reason. My friends are going to advise that new doctor of hers, Telinger, that you're in. Just stick to your rooms until you're called."

Waiting was dreary. Hedrock paced the thickly carpeted floor, thinking of the months since he had been banished from the palace.

Actually, it was the last few days that had been worst.

Somehow, the whisper had spread abroad. Hedrock heard it far and wide. It didn't come over the telestats; no official word was given out; just how it became known definitely was impossible to say.

He had heard it sitting in the restaurants he sometimes frequented. He heard it walking along quiet streets. It drifted on thin breezes, and rose in briefly heard words above the clamor of conversation on carplanes.

It had not been evil in intent, or in actuality. It was simply, there was going to be an Isher heir *any day*, and the excited world of Isher was waiting for the announcement.

They didn't know it, but the day was—now.

The crisis came at ten o'clock at night. A message from Dr. Telinger brought Hedrock out of the study, and up into the Imperial apartments.

Telinger, Hedrock found, was a middle-aged medico with a thin face, which was wrinkled with dismay as he greeted his visitor.

The poor fellow, Hedrock knew, was guilty of nothing but weakness. He had been dragooned into the Imperial service as a replacement for Dr. Neel, who had been summarily dismissed after being court physician for thirty years. Hedrock could still remember one day at the dinner table when Innelda had inveighed against Dr. Neel, calling him "an outdated practitioner who's still palming himself off as a doctor on the strength of having delivered me into the world."

There was no doubt at all that the old man had told her the exact situation; and Innelda hadn't liked it.

And there was also no doubt, Hedrock realized as he listened to Dr. Telinger, that the new doctor had never been granted the privilege of a too thorough examination. She had picked well. He looked the kind of man who would be too awed to override the resistance of his Imperial patient. Only—

"I've just discovered the truth," he almost babbled at Hedrock. "She's under antipain, but I've left a communication gap. Prince Hedrock, you must persuade her. It's the baby or she; and her conviction that she will live is utterly unfounded.

"She has threatened me," he finished whitely, "with death if the baby does not survive."

Hedrock said: "Let me talk to her."

She lay in the bed, calm and still. There was not a fraction of color in her cheeks; and the rise and fall of her chest was so infinitesimal that she seemed already dead.

Hedrock was conscious of distinct relief when the doctor placed the communicator mask gently over that quiet yet intense face. Poor tyrant, he thought, poor, wretched, unhappy tyrant, caught up by inner forces too great for her to command or think through.

He picked up his end of the communicator. "Innelda," he said tenderly.

"It's—you—Robert." The answer was slow in coming and yet fierce. "I—told them—not—to—let—you—come."

"Your friends love you. They want to keep you."

"They—hate—me. They—think—I'm a—fool. But I shall show them. I *will* myself to live, but the child must live."

"Prince del Curtin has married a lovely and wonderful woman. They will have beautiful children worthy of the succession."

"No child but mine—and yours—will rule in Isher's name. Don't you see, it is the direct line that matters. There has never been a break. There will not be now. Don't you see?"

Hedrock stood sad. He saw only too well. In the old days when, under various aliases, he had persuaded dozens of Isher emperors to marry women to whom family mattered, it had not seemed possible that the trait could ever become too strong.

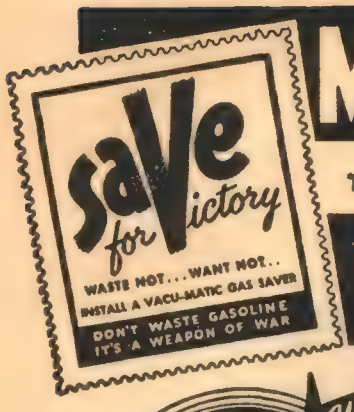
Here was proof that it could be tragic.

"Robert—will you stay—and hold my hand?"

He stayed, and watched the life force ebb; waited till death lay heavily on the chilling body, and the baby was a thing whose raucous yowling made him sick with anger against all babies and the wretched immortality they represented.

A light year away, a hundred-mile-long ship got slowly under way. Great thoughts bounded and roared through its length:

". . . The second general examination is almost as futile as the first in its basic results. We know some of the laws—but why did this ruler, who possessed a world, give her life for her child, when her whole being shrank from personal death? Her reasons, that she personally must carry on her line, logically inadequate. It is only a matter of a slight atomic rearrange-



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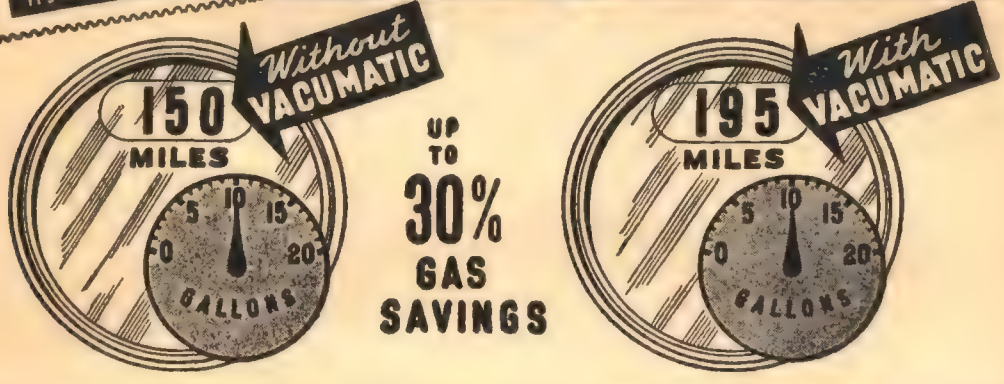

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ment. Many men and women are alive who could carry forward her tribal progression.

"It remains but to bring her back to life, and make a record of the emotional reactions of those around her to the resuscitation.

"We need not return by way of Centaurus. Our prisoner—Neelan—has by an ingenious method nullified the logic that required destruction. Only accident that he has not yet been rescued. Any hour. We can leave the galaxy within one—period.

"This much we have learned; here is the race that shall rule the sevagram."

THE END.

THE ANALYTICAL LABORATORY

I've promised before to mention any story which gets unusual panning or unusual praise; twice before I've carried out that promise, and another instance is at hand. "Mimsy Were The Borogoves," by Lewis Padgett, was unquestionably a highly unusual story. I received several letters complaining that it was pointless. But I also received a surprising number of letters written in to praise that story—and for that exclusive purpose. The result unbalanced the usual Lab calculations, since the tabulated votes for "Mimsy" stretched out and out across the page, beyond the tabulations listing the other yarns. Wherefore, the best way of handling it seems to be to simply put it in first place, *sans* point score. Because the competition between three really powerful stories, each fully worthy of a first place, in an issue which, because of the length of those three, contained only five stories, crossed up the point score system badly. So the table reads:

Place	*Story*	*Author*	*Points*
1.	Mimsy Were The Borogoves	Lewis Padgett	Special
2.	The Weapon Makers	A. E. van Vogt	1.2
3.	Opposites—React!	Will Stewart	2.1
4.	Flight Into Darkness	Webb Marlowe	3.8
5.	The Man In The Moon	Henry Norton	4.1

In the Liars' Division, Colin Keith collects twenty dollars for his handling of the problem of superefficiency. L. Sprague de Camp took second place, and Henry Kuttner's item about "Blue Ice" takes the five-dollar bill. The professional liars took the prizes this time—partly because the amateur liars hadn't supplied the department very heavily that issue.

THE EDITOR.

How to Make YOUR Body Bring You FAME

...Instead of SHAME!

ARE YOU Skinny? Weak? Flabby?

Will You Let Me Prove I Can Make You a New Man?

I KNOW what it means to have the kind of body that people pity! Of course, you wouldn't know it to look at me now, but I was once a skinny weakling who weighed only 97 lbs.! I was ashamed to strip for sports or undress for a swim. I was such a poor specimen of physical development that I was constantly self-conscious and embarrassed. And I felt only HALF-ALIVE.

But later I discovered the secret that turned me into "The World's Most Perfectly Developed Man." And now I'd like to prove to you that the same system can make a NEW MAN of YOU!

What "Dynamic Tension" Will Do For You

I don't care how old or young you are or how ashamed of your present physical condition you may be. If you can simply raise your arm and flex it I can add SOLID MUSCLE to your biceps—yes, on each arm—in double-quick time! Only 15 minutes a day—right in your own home—is all the time I ask of you! And there's no cost if I fail.

I can broaden your shoulders, strengthen your back, develop your whole muscular system INSIDE and OUTSIDE! I can add inches to your chest, give you a vise-like grip, make those legs of yours lithe and powerful. I can shoot new strength into your old backbone, exercise those inner organs, help you cram your body so full of pep, vigor and red-blooded vitality that you won't feel there's even "standing room" left for weakness and that lazy feeling! Before I get through with you I'll have your whole frame "measured" to a nice new, beautiful suit of muscle!

Only 15 Minutes A Day

No "ifs," "ands" or "maybes." Just tell me where you want handsome, powerful muscles. Are you fat and flabby? Or skinny and gawky? Are you short-winded, pepless? Do you hold back and let others walk off with the prettiest girls, best jobs, etc.? Then write for details about "Dynamic Tension" and learn how I can make you a healthy, confident, powerful HE-MAN.

"Dynamic Tension" is an entirely NATURAL method. Only 15 minutes of your spare time daily is enough to show amazing results—and it's actually fun. "Dynamic Tension" does the work.

"Dynamic Tension!" That's the ticket! The identical natural method that I myself developed to change my body from the scrawny, skinny-chested weakling I was at 17 to my present super-man physique! Thousands of other fellows are becoming marvelous physical specimens—my way. I give you no gadgets or contraptions to fool with. When you have learned to develop your strength through "Dynamic Tension," you can laugh at artificial muscle-makers. You simply utilize the DORMANT muscle-power in your own body—watch it increase and multiply into real, solid LIVE MUSCLE.

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